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GONORRHŒAL IRIDO-CHOROIDITIS.

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Gonorrhœal iritis or iridochoroiditis seems to be a variety of rheumatic inflammation, but it develops much more rapidly, and the plastic character of the inflammation is much less pronounced. It seems to be rather a mixed form of plastic and serous inflammation. It is not an uncommon complication in patients affected with gonorrhœa, and here it must be considered as directly connected with the urethritis. The inflammation of the uveal tract never seems to follow the gonorrhœa immediately, but is invariably preceded by a rheumatic arthritis, generally of the knee-joint. It is distinct from the usual type of rheumatic iritis. It is very sudden in its onset, very rapid in its development, the pain is excessively severe, and the loss of vision is very rapid and complete. But the inflammation, though sometimes obstinate, eventually subsides rapidly and usually leaves little or no trace behind it. There is almost never any gelatinous or fibrinous exudation in the anterior chamber, and the main cause of the rapid and marked deterioration of vision seems to be due to a general serous infiltration of the iris and choroid, and a diffuse serous exudation into the aqueous and vitreous humors, more marked in the latter. Posterior synechiæ do form, but they are readily broken, and as a rule leave no trace behind on the anterior capsule of the lens. Such an iritis or iridochoroiditis is liable to relapse, even when no adhesions are present,

whenever the patient contracts another attack of gonorrhœa. A neglected gonorrhœal iritis, in which multiple posterior synechiæ have been formed, may of course, readily relapse, and in consequence of these relapses, the symptoms of the disease gradually lose their peculiar character. This disappearance of the iritis under appropriate treatment without leaving posterior synechiæ proves the absence of the plastic character. Its prompt disappearance distinguishes it also from the usual form of serous iritis.

De Wecker thinks that there is a class of patients who never suffer from arthritis or iritis, unless previously attacked by a gonorrhœa, and when the inflammation of the joints and iris is cured, it does not recur unless a fresh attack of gonorrhœa is contracted. He thinks that the tendency of certain diseases, in which there is more or less of an infectious character, to localize simultaneously in the eye and in the knee-joint, must rest on some identity of anatomical disposition furnished by the structure and division of various vessels. *Leber* believes that in the course of a gonorrhœal urethritis a lesion of the mucous membrane occurs, and that the microscopic germs developed by the urethritis thus find their way into the general circulation, and eventually cause the inflammation in the iris and knee-joints. However that may be, clinically speaking, the symptoms of a gonorrhœal irido-choroiditis are usually very much more severe than the ordinary rheumatic form of the disease, and always suggest a very unfavorable prognosis, which our experience with these cases teaches us is almost never confirmed by the results of treatment. No matter how severe the symptoms may be, if the case be properly and persistently treated the inflammation eventually rapidly subsides without leaving any marked impairment of vision. This tendency is well illustrated by the histories of the two cases which follow:

Case I.—A gentleman, aged 25, was brought under my care early in October. I saw him in consultation with his family physician, who gave me the following history: The patient was both hypermetropic and astigmatic, and had worn glasses in reading for several years. In April last he had a severe attack of gonorrhœa, which lasted nearly three months. This was accompanied by acute arthritis of the right knee and left shoulder joints. At this time the eyes were not affected. He recovered from the urethritis and the arthritis completely, but in the latter part of September he contracted a second attack of gonorrhœa, which resisted treatment as obstinately as the first attack. On the fourth day he was attacked by severe arthritis of both knee-joints, and on the sixth day by an

acute inflammation in the left ankle and wrist-joints. On the eighth day after the appearance of the urethral discharge, the right eye became inflamed with severe pain, photophobia and lachrymation of a scalding character. I saw him first on October 9th, two days later, and there were then all the symptoms of a severe irido-choroiditis of the right eye: excessive ciliary and conjunctival injection, chemosis of the ocular conjunctiva, cloudy aqueous humor, discolored and immovable iris, posterior synechiæ, and extensive exudation into the vitreous humor, masking all details of the fundus. Vision was reduced to $\frac{10}{200}$ and the tension was decidedly increased. There was excessive pain in the eye and head. At that time the left eye was intact, but on the next day signs of iritis appeared in the eye, and a severe irido-choroiditis rapidly developed. The grave nature of the attack was at once recognized. Three leeches were applied to each temple, hot fomentations were kept constantly applied to the eyes, a two per cent. solution of cocaine and a four-grain solution of atropine were applied every two hours, and ten grains of sodium salicylate were ordered every hour, and this was directed to be continued as long as the stomach would bear it. On October 12th the sodium salicylate was stopped on account of gastric disturbance. After twenty hours of the above treatment, the patient was almost entirely relieved from pain. Potassium iodide in 20 grain doses was then ordered and continued until the 28th of October, when there was a recurrence of the inflammation in the eyes and knee-joints. The potash was stopped and the soda was again administered in the same manner as at first, but on the second day I was obliged to discontinue it on account of gastric irritation. The treatment was then confined to the hot fomentations, atropine and cocaine, with an occasional hypodermic injection of morphine to allay the severe pain. On November 11th the left eye was markedly improved, with a widely dilated iris and a hazy vitreous, and a vision of $\frac{20}{100}$; but in the right eye the ciliary injection was still quite marked, and there was considerable chemosis of the conjunctiva. The iris was, however, widely dilated, all the adhesions were broken, the vitreous was much clearer and all the details of the fundus were visible. By the 16th of November vision was $\frac{20}{20}$ in each eye, the tension was normal, there was no pain, and the ciliary injection had nearly subsided. The knee-joints were nearly well, and the wrist and ankle-joints were entirely well. The urethral discharge had also ceased.

Case II.—A gentleman, aged 32, came under my care for the

first time on October 29th. Three weeks before he had contracted a severe gonorrhœa, and was treated by his family physician. For a week there was no complication except a mild orchitis, but on the eighth day the left shoulder and right knee became painful, and there was soon developed an acute arthritic inflammation in both joints, with great swelling and high fever. On the fourteenth day, after a violent attack of pain in the right side of the head and right eye, the eye became inflamed and vision was rapidly impaired. When I saw him on the fifteenth day, there was considerable swelling of the lids, some chemosis of the conjunctiva, marked conjunctival and ciliary injection, a hazy, aqueous humor, discolored iris, posterior synechiæ, and a diffused infiltration into the vitreous, with scarcely any reflex from the fundus. Vision was reduced to perception of light. The tension was normal. The irido-choroiditis had developed with great rapidity, which accounted for the marked impairment of vision. The same line of treatment was pursued in this case as was employed in the first case. Ten grains of sodium salicylate were given every hour for nearly three days before signs of gastric irritation compelled the discontinuance of the drug. Hot fomentations were applied continuously to the eye, the same mixture of atropine and cocaine was instilled every two hours and three leeches were applied to the temple. For the first three days no visible effect was produced upon the intra-ocular inflammation, though the pain in the head, shoulder and knee-joints was decidedly relieved. After an interval of twenty-four hours, potassium iodide in twenty-grain doses was administered three times a day, combined with twenty grains of the bisulphate of quinine. This relieved the pain in the eye very rapidly, but the potash soon disturbed the stomach, and I was forced to discontinue it. The local treatment was continued, and on the ninth day after I saw him the treatment was changed to the salicylate of cinchonidia, five grains every hour. The patient bore this very well and with most excellent results. All acute inflammatory symptoms in the joints disappeared, the urethral discharge ceased, the aqueous and vitreous cleared up rapidly, and the ocular injection gradually diminished. Three weeks after I first saw him all signs of irido-choroiditis had disappeared, the media were perfectly clear and vision had risen to $\frac{20}{30}+$. The other eye had remained intact throughout.

47 West 36th St.

ON THE USE OF THIERSCH'S SKIN GRAFTS AS A SUBSTITUTE FOR CONJUNCTIVA.

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Skin grafts cut by Prof. Thiersch's method are taken from any convenient surface of the skin (usually from the arm or the thigh) in this manner: The skin is rendered thoroughly aseptic and then being drawn tense and well wet with a solution of sodium chloride (one-half per cent), the blade of a sharp razor is laid upon and firmly pressed against the skin in such a manner that slight sawing motions will make the edge of the razor just cut down to the papillary layer and shave off a thin scale consisting of epidermis and the tips of the papillæ. These "skin-shavings" are almost as thin and supple as pieces of mucous membrane while they possess a denser and firmer texture and greater vitality; their transplantation upon a wound is a comparatively simple procedure and usually crowned with success, while the transplantation of mucous membrane is a very tedious work and the results are usually anything but satisfactory. These reasons have induced me to substitute Thiersch's grafts for mucous membrane to replace the lost conjunctiva; and although these epidermis scales implanted upon the conjunctiva do not gain the structural character of a mucosa, they become as smooth and as soft as the surrounding conjunctiva, and differ from it only by their opaque whitish color. They have proven themselves an excellent material for repairing defects of the conjunctiva in the following conditions:

1. *For the relief of extensive adhesion of the lower lid to the eyeball (symblepharon) following the destruction of the palpebral and ocular conjunctiva by lime or hot metal.*—The modus operandi can be best explained by reporting one of the cases of this category.

Carl S., 9 years old, came to the Policlinic, Oct. 5, 1891, with an extensive burn of the left eye by fresh mortar. The lower nasal portion of the ocular conjunctiva, from the corneal margin to the cul-de-sac, and the tarsal conjunctiva from the caruncle to the center

of the lower lid, exhibited the dead-white appearance of escharotic tissue; and the lower portion of the cornea was clouded by innumerable dust-like particles of lime embedded in the lower strata of the corneal epithelium.

Fortunately the caustic action did not reach beyond the conjunctiva, the sclera remaining intact; but when after due time the eschars were eliminated the opposing granulating surfaces of the lid and globe became adherent, so that finally the nasal half of the lid-border was tightly bound to the eyeball near the corneal margin by a dense, firm and broad cicatricial band. This cicatrix had drawn the ocular conjunctiva from all sides toward the lid and produced two longitudinal folds.

Two months later, when the process of consolidation and shrinking in the cicatricial tissues was likely to have been completed, on Dec. 10, the following operation was performed for the relief of the symblepharon.

The boy was anesthetized, his face and eyes and especially the conjunctiva thoroughly scrubbed with boric acid solution. Now the adhesion between lid and globe was severed in such a manner that all the conjunctiva pulled down by the scar was preserved for the eyeball. The incision was therefore begun closely to the lid border, whence it followed the cicatricial band toward the caruncle and toward the cul-de-sac, until the lid could be fully and easily everted.

When this was done, the nasal portion of the lid surface showed a wound of an irregular rhomboid shape, measuring about ten millimeters in length, and eight millimeters in width. This defect was covered with a Thiersch graft taken with the razor from behind the boy's left ear. The graft was carried on the razor to the wound and spread over it and its edges smoothed out carefully.

The bleeding had ceased, and the wound had been carefully washed with chloride of sodium and cleansed of all coagulated blood before the graft was put on. Finally the eye was again washed with the chloride of sodium and closed with a bandage, to be removed at night.

Dec. 11. Graft is in place, adherent and reddish; only its inner edge slightly overlapping the wound border is grayish-white and not adhering.

Dec. 14. Overlapping edges macerated and came off; body of graft adherent as a grayish-red membrane.

Jan. 27, 1892. The graft had restored the surface of the lower lid to a depth of six millimeters; but the extensive loss of ocular con-

junctiva had resulted in the formation of a dense and very vascular cicatrix, occupying the inferior and nasal portion of the sclera and extending, pterygium-like, into the cornea; and whenever the eye turned upwards, this cicatricial band dragged the lower lid up, thereby causing great inconvenience and irritation of the eye.

This embarrassment of motion of the eye was relieved by the following operation, April 11, 1892: The whole pseudo-pterygium was carefully dissected off from cornea and sclera and all the way down to the cul-de-sac of the lower lid. It was severed from the eyeball but left in connection with the lower lid and fastened by two sutures down in its cul-de-sac to serve as a further enlargement of the conjunctival surface of the nasal part of the lower lid. It enlarged this surface from six millimeters to ten millimeters. The large wound surface on the eyeball was covered with one Thiersch graft, fifteen by ten millimeters, taken from the boy's forearm. But before the graft was cut, a silk ligature was passed through the conjunctiva at the temporal margin of the cornea, passed around the auricle and tied so that it held the eyeball immovable in a divergent position for twenty-four hours. I considered this immobilization of the globe advisable for the reason that as the wound on its nasal side extended to the retro-tarsal fold I feared if the eyeball was allowed to rotate inward this rotation would push the graft against the caruncle and retro-tarsal fold and dislodge it from the wound. The ligature being tied the graft was cut and transported to its place on the eyeball; when it was perfectly spread out on the wound, the lids were closed and a binocular bandage was applied.

After twenty-four hours the bandage was removed, the graft seemed to adhere firmly, and therefore I released the eyeball from the immobilizing ligature, but again put on a binocular bandage. After another day, however, the bandage was left off and the eye treated only with boric acid solution. In two weeks the healing was complete and the loss of the ocular conjunctiva appeared well replaced by the skin graft. Six months later the grafted skin was reduced in size to 10x7 millimeters; but it had prevented the reformation of those cicatricial strings between the lower lid and globe and made the movements of the eyeball comparatively free and comfortable.

2. For the relief of the excessive shrinkage of the conjunctiva in trachomatous eyes.

In the course of trachoma the atrophic degeneration of the conjunctiva not infrequently causes a complete obliteration of the retro-tarsal fold and so much shrinkage of the conjunctiva of the lower lid that the latter appears attached to the eyeball almost as

closely as in the case of a real adhesive union between lid and eyeball. And like the real symblepharon, this condition of pseudo-symblepharon greatly impedes the movements of the eyeball and is a prolific source of irritation and frequent inflammations of the eye. It is evident that to relieve such eyes of this troublesome condition we must (just as in true symblepharon) detach the lid from the eyeball and clothe the raw surfaces with some material to replace the shrunken conjunctiva. And for this purpose I have found Thiersch's grafts a better material than the conjunctiva of animals or the mucous membrane of the mouth; not to speak of the thick and clumsy skin flaps transplanted from the upper or lower lid.

One of the most instructive cases of this condition was under my care two years ago. Twenty years the patient had been suffering from trachoma and its sequelæ. Her vision was very poor because the cornea of each eye was very hazy and vascular and all efforts to clear up the corneæ had been frustrated by frequent attacks of fresh inflammation. But what the patient complained of the most was a painful pulling sensation in the eyelids with every attempt to move the eyes; the pain was especially severe when she tried to look up. The cause of this trouble was found in the symblepharon of the lower lids; the conjunctiva was shrunken to such an extent that near the external canthus the lid-border was very closely bound to the eyeball, the conjunctiva there being reduced to a narrow strip of two millimeters; toward the inner canthus the lid surface became a little wider, but at its widest place it measured but six millimeters. When I tried to draw the lid downwards the ocular conjunctiva at once made a tense vertical fold extending from the corneal margin down to the lid border, and the eyeball was visibly pulled downwards by the lid, and when the eyeball made a movement in any direction it had to drag the lower lid along.

August 20, 1891, I made an incision along the border of the lower lid of the left eye and dissected up the tissues until the lid could be fully everted. Except in the vicinity of the inner canthus there was no conjunctiva left on the lid after this dissection; so I covered the whole surface with a Thiersch's graft taken from the patient's left arm. No bandage was applied.

August 22. The graft perfectly in place; adherent and pink.

August 27. Graft firmly adherent; pale red.

October 15. The graft has become a permanent part of the lid, creating a surface of a uniform depth of eight millimeters. Since the operation the lady has found she could turn the left eye with so

much ease and comfort, that she readily consented to the same operation being performed on the right eye. This graft also healed in well.

September, 1892. The patient has experienced the most decided benefit from these operations; for she is relieved of the annoying and painful impediment of the movements of the eyes; her eyes have been remarkably free from inflammation, and the corneæ have become clearer and brighter, though they still are far from being perfect.

3. Thiersch's grafts can be used for enlarging a contracted conjunctival pocket, to make the insertion of an artificial eye possible.

Five years ago a young lady who had lost her left eye asked me to devise some way by which she would be able to wear a glass eye. Her eye had been enucleated; but violent cellulitis had caused so much contraction of the tissues that even the smallest glass eye could not be inserted. The center of the conjunctival pocket was a solid mass of dense cicatricial tissue from which callous ridges extended to both eyelids in various directions. It occurred to me that this pocket might be enlarged to the necessary capacity by the use of skin grafts. Excising the central scar and freely dividing the radiating ridges and cicatricial strings I released the conjunctiva so that it could recede in all directions. A very roomy pocket was thus created, but a large wound was left in the center which I filled with a skin graft taken from the arm. The graft was almost one inch square, and it was no easy task to get it nicely spread out over the deep-seated wound; and when after considerable patient manipulations this was accomplished the question arose how it could be kept smoothly in place. For without any support to hold it in its place, I was sure I should find on the following day the whole flap wrinkled and detached. I, therefore, packed the conjunctival sac in the following manner: while an assistant was holding the lids well retracted, I laid a small pledget of absorbent cotton wet with chloride of sodium solution upon the skin graft; upon this pledget I put a second and little larger one, and a third one, and so continued until the cotton filled the whole cavity even with the eyelids. These were then closed over the packing, and also covered with cotton, so that a roller bandage could exert slight, even, continuous pressure through the lids and the packing upon the graft.

This dressing was left undisturbed for two days and when it was cautiously removed I had the pleasure of finding the skin graft perfectly smooth and so firmly adherent that the dressing was not

re-applied. In the course of a month some contraction of the tissues had taken place, but the conjunctival lining of the cavity was smooth, and a small glass eye could be put in without difficulty. I advised her to wear the small eye for some time, and then to exchange it for a larger one. But whether she could do it I cannot say, because I have never seen the patient again.

In another case I have employed a Thiersch graft also for the purpose of enabling the patient to wear an artificial eye; but the obstacle to the insertion of the glass eye was of a different nature than in the first case.

The patient, 50 years old, had lost his right eye sixteen years ago through the explosion of a pop bottle; a piece of glass had cut the eyeball so badly that it had to be enucleated nine days after the accident. The conjunctiva of the lids also had been lacerated extensively, and when, after recovery, the patient wished to wear an artificial eye, we are told that the smallest eye only could be inserted and in order to keep it in the patient had to wear a bandage over it for several weeks. In other words, even for this very small glass eye, the space was too narrow; and the glass eye had to stretch the tissues to make room for itself, but the patient could never wear the eye with real comfort, and the last six months he could not get it under the lids any more at all.

This difficulty was fully accounted for by the condition of the lids; at the external canthus a strong and broad bridle of scar tissue bound the conjunctival surfaces of the lower and upper lids together so firmly that the temporal edge of the glass eye could not be slipped behind the commissure, and the cicatricial induration extending also far into the lower lid made its conjunctival surface so rigid and unyielding that the lower edge of the glass eye could not be depressed behind the border of the lower lid. To remove these obstacles to the insertion of a glass eye, I performed the following operation:

FIG. A.

Oct. 10, 1892.—The cicatrice in the lower lid was dissected out from the center of the lid toward the external canthus in the shape of a tongue-like flap (Fig. A).

From the base of this flap one incision was carried upward into the upper lid to divide the cicatricial band which had bound the lids together. The tongue-shaped flap was then transplanted upon the raw surface of the upper lid and fastened by three fine silk sutures, and the defect on the conjunctival surface of the lower lid was filled with a Thiersch graft taken from the patient's left arm. The conjunctival space was packed with cotton wrung out of the salt solution, and the immobility of the lids secured by the proper bandage.

Oct. 12. First change of dressing; cotton moist and clean, no trace of mucous secretion; the graft smooth, pinkish and in perfect apposition.

Oct. 14. Dressing changed again.

Oct. 15. Graft firmly attached to its new place. No further dressing.

Nov. 12. The engrafted skin looks smóoth and pale; the lower lid is flexible and free from induration; no cicatricial bridles at the external canthus.

Feb. 20. The patient did not get a glass eye until two weeks ago; and now it is so freely movable that it may be exchanged for a larger one. The grafted skin is smooth and moist; it has shrunken somewhat, especially in width; but it still serves the purpose to keep the lower lid free from indurated scar tissue.

4. Thiersch's grafts may be used in certain cases of pterygium.

When that fan-shaped fold of ocular conjunctiva, called pterygium, is dissected from the cornea and the sclero-corneal border, it draws back toward the caruncle and leaves near the corneal margin a portion of the sclera denuded of conjunctiva. This denuded area varying in extent according to the size of the pterygium, must not be allowed to fill up with granulation tissue because the resulting cicatrix would draw the ocular conjunctiva again into a fan-like fold and thus lead to a recurrence of the pterygium.

If the denuded area is of a moderate extent it can easily be covered with the conjunctiva which is drawn over it from above and from below, and held together by two sutures.

But in some cases of pterygium the gap in the ocular conjunctiva is so large that it is nearly impossible to draw the conjunctiva over it; and if it is closed, the strain upon the sutures is so great that they cut through in 24 hours and the edges of the conjuctiva separate widely. In such cases I thought we might get better results if we fill the gap with a membrane of some other material than conjunctiva; and as I had found Thiersch's grafts an excellent

material for patch work in other defects of the conjunctiva, I decided to try them in such pterygium cases. I have made several experiments which were reported in the section of Ophthalmology of the American Medical Association at the meeting in June. I take from this report the description of the first case to show the modus operandi.

The pterygium reached to the center of the cornea, and the sides diverged from the apex backwards so rapidly, that when they crossed the corneal border they included about one-fourth of the corneal circumference. This pterygium was dissected off from the cornea, and the subconjunctival fibres which bind the pterygium to the sclera and cause the foldings of the conjunctiva, were carefully and thoroughly divided all the way back to the caruncle so that the conjunctiva could retract and unfold itself. The retraction left a large area of the sclera (10 mm. wide and 12 mm. high) denuded of conjunctiva, (Fig. I).

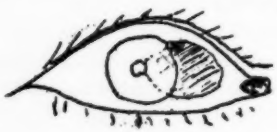

FIG. I.

To fill this defect I shaved a Thiersch graft from the inside of the patient's forearm, transported it from the razor directly to the denuded sclera and spread it out smoothly over the entire wound. I had cut the graft a little larger than the wound so that when the graft was smoothened over the sclera, the edges of the conjunctiva were overlapping the graft. My idea in tucking the edges of the graft under the conjunctiva was that the overlapping conjunctiva would assist in keeping the graft in place, and protect its edges against being rolled up or wrinkled by the frictions of the eyelids on the eyeball during the latter's rotations. But this part of the plan did not work well; for on the next day I found the edges of the graft were not under but even with the conjunctiva, and the graft reached about 2 mm. over the cornea. It had evidently been pushed toward the cornea just so much as it had been tucked under the conjunctiva. On the third day when I was satisfied the graft was firmly attached to the sclera, I lifted the edge which overlapped the cornea and trimmed it back even with the margin of the cornea. At first the graft had a pink color; but after the second week it was white, being covered with epidermoidal cells which could easily be scraped off. Later on the layer of epidermoidal cells became thinner but firmer.

and now (I saw the patient on April 23 the last time) the surface of the graft is smooth and shining, and only a very little higher than the ocular conjunctiva, (Fig. 2).

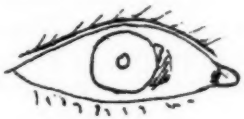

FIG. 2.

It has shrunken, more in the horisontal than in the vertical diameter; but it holds its place well, and forms a firm immovable bar which makes it absolutely impossible that the conjunctiva should ever again be drawn into the cornea.

Venetian Building.

THE EYE OF THE NEGRO.*

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In presenting this paper for your consideration, it is not contended that any new discoveries have been made, nor that there is anything very wonderful about the eye of the negro, but after a somewhat extensive experience among them it seems that some points of interest not before emphasized might be brought more into notice, and others which have already attracted general attention might be further elaborated and discussed. But little has been read by the writer on the subject for the reason that the literature is scanty, and the opinions herein expressed have been chiefly formed from experience gained in his own practice.

It is well known that the negro race in this country is fast losing its identity as far as purity of blood is concerned, the mulatto is seen on every hand and when the lighter color is not perceptible the mixed blood may be readily detected by the thinner lips, the higher nose and less prognathous skull. In what is known as the low country of South Carolina, and the sea islands which are adjacent to the coast, are probably as pure blooded negroes as can be found out of Africa. On many of the sea islands it is even now impossible for the stranger to understand their speech. From a study of these people, and of the mulatto, this paper has been prepared and though you may smile when it is said that the eye of the

* Read before the American Ophthalmological Society, July 21, 1892.

negro is not as good as before the war, none the less it is true, and furthermore their eyes are deteriorating every day and blindness is rampant among them. This statement may need some explanation. During the days of slavery the master was as jealous of the good health of his slaves as of his family, the best medical talent was engaged for their protection, and on many plantations the doctor was paid by the year to make regular visits. The slaves were well fed and clothed, and as far as disease was concerned led lives but little exposed. Syphilis and other wasting diseases were rare among them and their eyes were strong because the vision was not taxed by difficult near work. They were employed for the most part in ordinary agricultural work on the plantations and as domestics, hence there was little or no opportunity for using their eyes upon any work that was likely to cause strain. With the war came many troubles, negroes were sent to work upon the fortifications which were constructed along the coast, troops from both armies camped in their midst and syphilis having thus a comparatively new field spread as fire on the prairie, carrying everything before it, so that now it is scarcely an exaggeration to say that when you see a negro, you see a case of syphilis. Then came freedom and the negro was no longer under the surveillance of the careful master, the doctor was no longer paid to see him regularly, food and clothing were not provided and he was truely a free man, but an outcast. Evil habits and careless living took possession of him and consequently to-day we see a race that thirty years ago was strong and healthy, now honey-combed with syphilis and its sequelæ. They are eminently prolific, bringing into life thousands of children who, if they survive, only live to increase the squalor and hasten the deterioration of the race.

A careful inquiry among the older physicians proves that before the war these people had little or no eye trouble beyond cataract, that ulceration of the cornea which now numbers its victims by the thousand was almost unknown, and it is certainly very rare that nebulous corneæ, iritic adhesions and eyes lost from ophthalmia neonatorum are seen among the older and ex-slaves, while among the younger, the post-bellum negro, such cases are not only of daily occurrence but steadily increasing. It is a well established fact that the race as seen now is peculiarly liable to corneal diseases, and it has been thought that there might be some racial peculiarity to account for this weakness, but it is not unlikely that this may be due to the diseased condition of the people who, being now thoroughly syphilized, possess all the dyscrasias that may

follow such a condition and present a most fertile soil for all ulcerating and wasting diseases. Not entirely to syphilis can all this be laid, but to their manner of living, poorly housed and clothed, and ill nourished. Parents are utterly indifferent to the condition of their children, allowing them to go months without treatment, or perhaps, using the filthiest of domestic remedies. Blindness, or greatly impaired vision, is seen on all sides from this cause, and the outlook is truly discouraging. Trachoma is comparatively rare among them, but so it is among the whites in Charleston and throughout South Carolina.

Up to the present time but few immigrants have come to this state, and it seems probable that the worst forms of granular lids may not have been introduced. Equally as many cases have been met in the negro as the white, and the most severe have occurred in the eye of the former. Iritis, as might be supposed, is of very common occurrence, and many eyes are lost from pure inattention to this trouble. Cataract is quite as frequently seen in the negro as the white, for upon referring to the records and taking seven hundred of whites and of blacks indiscriminately, there were thirty-six cases of cataract among the seven hundred whites, and thirty-seven among the same number of negroes. The thirty-seven negroes were, for the most part, old persons who had been slaves, who either could not read or had never used their eyes for trying work, and hence the cataracts cannot be said to have been caused in part by eye-strain, which is regarded by some observers as a potent cause with the whites. Retinitis, optic neuritis and choroiditis are not infrequently seen in the eye of the negro, but retinitis pigmentosa has not been observed in the pure blood black, though Dr. Ayres, of Cincinnati, has recently reported such a case as having occurred in the eye of a mulatto. Albuminuric retinitis is not as commonly observed among them as in the white. Two cases of embolism of the retinal artery have been seen by the writer in mulattoes, but none in the true black.

Xerosis conjunctivæ is, in Charleston and vicinity, a condition peculiar to the negro, and especially the children, and as yet not a case has been observed among the whites. Not until recently was a case met in the adult negro, and this was a man of fifty odd years of age. He came to the city hospital complaining of night blindness, a condition that almost invariably accompanies this form of xerosis. The altered condition of the conjunctiva was well marked, and at the outer and inner corneo-scleral junctions, were the satin-like triangular shaped patches which are seen at times,

and always indicate hemeralopia, but are not invariably present when that condition exists. The corneal ring of ulceration was absent in this case. The iris responded promptly when atropine was instilled, and the ophthalmoscopic examination showed a nerve somewhat whiter than normal, vessels not contracted, but over the whole a slight haze. There were no opacities in the cornea or vitreous. The field of vision was very much contracted, a point which heretofore seems to have escaped attention, and the color perception was fairly good. The man was a laborer, who lived an exposed life, but his physical condition was not bad. That this affection should be met exclusively in the negro (oftenest in those of purest blood), and especially in children, is extremely interesting; that it shows a low state of health is undoubted, and that in many cases tonic treatment and good food will bring about a cure, while in others nothing seems to improve, and they gradually waste and die, has been proved by a considerable experience.

Several theories have been advanced as to the cause of this condition of the eyes, but none are satisfactory, because it has not been explained why it occurs only in negroes, while whites living in the same localities and under almost identical influences are not affected. It would appear that the negro is less likely to have tumors of the eye than the white, for but two cases have been seen by the writer. One was a sarcoma in the orbit of a mulatto woman of middle age. The other was a small, pinkish growth, easily seen behind the iris when the pupil was dilated, which impinged on the lens and caused cataract. This tumor was slow in growth and painless. The patient declined an operation. Two cases of abscess of the orbit have been observed by the writer in negro children. One of these was of interest on account of the tender age of the child, it being only two months old. Both made rapid recoveries and no necrosed bone was found in either. The refraction of the eye of the negro is an extremely interesting subject. Descended from a primitive people, they remained much the same after they became slaves. Their masters were averse to their being taught to read, and but comparatively a few learned the trades. The maid-servants were frequently taught fine needlework, but never gave much time to it. They were essentially plantation hands, and therefore had little cause for straining the vision. It is said that myopia is a sign of civilization, therefore it was not of common occurrence in the pure-blooded, ante-bellum negro; and even now it is rare in the true negro excepting, perhaps, the myopia that may follow corneal diseases. The writer

has never seen but three cases of myopia in the black negro, and though they were black in color, still other features indicated mixed blood, therefore in the pure-blooded negro he has never seen a case of true myopia. But a comparatively small number of pure bloods have been examined for refractive errors when their eyes were under the influence of a mydriatic, for the reason that very few have ever come with any complaint that called for such examination, and those upon whom this examination has been made have permitted it solely for the satisfaction of the writer. The vision has been almost invariably tested, and in the great majority of cases was found to be normal unless some haziness of the media existed. A very considerable number of ophthalmoscopic examinations have been made, and as nearly as can be determined by this instrument, but few varied from the normal or emmetropic eye. Among the mulattoes a very different state of affairs exists, and numerous cases of defective vision, caused by refractive errors are constantly seen. More of the mulatto women use glasses than the men, for the reason that the former are usually dressmakers and school teachers, whereas the men are generally barbers and waiters. The eyes of sixty negroes, blacks and mulattoes, have been recently examined for refractive errors. They were examined with the eyes of nearly all under the influence of a mydriatic (atropine or homatropine) with the following results:

BLACKS, 11.

Males.					Females.				
Em.	H.	M.	Astig.		Em.	H.	M.	Astig.	
			H.	M.				H.	M.
4	0	2	.....	.....	3	1	0	0	1

MULATTOES, 49.

Males.					Females.				
Em.	H.	M.	Astig.		Em.	H.	M.	Astig.	
			H.	M.				H.	M.
.....	4	3	0	0	1	21	7	11	2

Of the sixty cases examined, eleven were blacks and forty-nine were mulattoes. Of the eleven blacks six were males and five females. Four of the black men were emmetropic and two † my-

† Ibid.

opic. Three of the black women were emmetropic, one was hyperopic, and one had myopic astigmatism. Of the forty-nine mulattoes seven were men and forty-two women. Of the seven men four were hyperopic, three myopic.

Of the forty-two mulatto women, one was emmetropic, twenty-one were hyperopic, seven myopic; eleven had hyperopic astigmatism and myopic astigmatism.

From the above it may be inferred that the mulatto is very much more likely to suffer from ametropia than the black, and that more of the mulatto women are troubled than the men. Of the blacks but few have been examined, but a majority of these, of both males and females, were emmetropic, so that it may be said that the eye of the true black is either emmetropic or slightly hyperopic, and rarely myopic; and that among the mulattoes ametropia is very nearly, if not quite, as frequently seen as among the whites. Undoubtedly the eye of the negro is failing from three causes, viz.: Civilization, syphilis and education. Civilization has brought him in contact with the white man from whom he is getting syphilis and education, the former causing all diseases of the eye, principally keratitis and iritis, and the latter being placed upon this insecure foundation produces myopia.

REFLEX OCULAR DISTURBANCES FROM IRRITATION OF THE GENITAL ORGANS.

By Edward B. Patterson, A. M., M. D.,
Of Michigamme, Michigan.

In this article I wish to present a subject with illustrative cases, which has occupied my close attention for several years and which I believe is too frequently overlooked, particularly by the specialist.

With the constant direction and concentration of thought along one line comes a narrowness of observation that too often renders the specialist oblivious to causes having their location outside his special field. Almost any ophthalmologist of large experience is able to furnish a long list of cases where functional affections in remote parts of the body have been relieved by correction of refractive errors. Comparatively few cases, however, have I seen reported where the cause of ocular troubles has been discovered to be reflex from a remote part of the body and a cure effected by the

removal of the cause. To this latter class I wish to add the histories of four cases coming under my own observation, and to consider them somewhat at length.

CASE I.—This was of a young man, 23 years of age, who applied for treatment at the hospital of Michigan University, while I was on the house staff, for an eye trouble of several years standing.

At time of admission there were decided constitutional symptoms of a catarrhal type; temperature 102 degrees, severe congestive headache, pain in back and limbs so severe that patient was confined to his bed. The local symptoms were intense photophobia with a blepharospasm that amounted to practical blindness. The palpebral conjunctivæ were intensely hyperæmic and swollen, lachrymation profuse. In the corneæ were many small ulcers without infiltration of base or margins—seemed to be simple excavation produced by local sloughing of corneal tissue. No blood vessels were present on the corneæ, and the condition seemed to be one of perverted corneal nutrition, from the constant pressure exercised upon the corneæ by the spasm of the orbicularis palpebrarum. Around the corneal periphery was a distinct zone as in iritis, though none was present, the corneal blood vessels were enlarged and tortuous, pressure over ciliary region was exquisitely painful. There was no history of syphilitic or other cachexia. Under the use of iced applications, artificial leech to temples, free irrigation with four per cent boric acid solution and saline purgative the symptoms, both general and local, rapidly subsided, and in a few days the patient was up and around the ward. Improvement was rapid for about ten days and the patient went freely about, in and out as he pleased, when suddenly, without any warning, he was taken with a series of very severe chills accompanied by a rapid rise of temperature to 104 degrees, with a development of all the symptoms before described in a severer form. He was again put to bed, and as the blepharospasm was so severe as to threaten sloughing of the corneæ entire, from strangulation, a canthotomy was made, palliative treatment pursued as before and patient placed on general tonic treatment. This exacerbation was followed, as before, by rapid improvement only to be repeated by another as soon as patient seemed well on the way to recovery. This experience was repeated several times, in spite of all the resources at hand, blisters to temples, seton in back of neck, etc. Finally, as patient was recovering from the last attack which he had before complete recovery, the professor in charge said to me: "There must be some extra ocular cause for this trouble; I wish

you would look into the matter; see if he practices masturbation." Accordingly, as soon as convenient, I talked with him alone and examined his privates. I found an elongated, narrow prepuce, and an inflamed, swollen meatus, from which oozed on urethral pressure a thin prostatic discharge. Looking up I asked him pointedly how long he had practiced self-abuse; after a little quibbling he stated about six years. Upon further investigation it was found that when a severe attack was upon him, and he was confined to bed in the general ward, where any movement on his part would be observed either by night or day, he had discontinued the practice for a time, of necessity; as soon, however, as he was somewhat improved and could be up and around, he would get off in the closet or somewhere apart from others and again resume the practice of his habit, which was followed every time within a few days by an exacerbation of his trouble.

After his admission he was told kindly but firmly that it was believed that the trouble arose from reflex irritation caused by his self-abuse, and that any further recurrence or attack would be followed by his discharge from the hospital, and that his friends would be informed of the reason.

He, fortunately, had not entirely passed that point where the sense of shame had become obliterated, and this turn in affairs made a profound impression upon him; he promised to reform and did so as far as his case remained under observation.

His improvement was rapid, and in six weeks he was discharged practically well, greatly improved in his general condition as well as the local.

Case II.—This was a girl of 16 years, whose history before and progress since admission to hospital was so like Case No. 1. that while no admission of guilt was ever obtained, her removal from a private room to the general ward was followed by such rapid progress as compared with her former condition, that it left little doubt as to the exciting cause of the difficulty.

Case III.—First came under my observation in June, 1892. A young French girl, 15 years of age, large and fully developed, consulted me about her eyes. First became sore in April; had been treated up to her coming to me by "An old woman good for sore eyes." When she first presented herself to me I found the photophobia so great that she could not open her eyes at all; upon separating the lids a profuse gush of tears burst out; lachrymation was very profuse, the lids were puffy, conjunctivæ swollen and hyperæmic; there were intense pain and ciliary injection. The

corneal surfaces had a dull gray appearance with many punctate depressions; this, taken with the general hazy infiltration of the corneal substance proper, and the flat face of the girl, led me to the diagnosis of interstitial keratitis of syphilitic origin. Under alterative and reconstructive treatment, with frequent irrigation of the conjunctival sac, with a boric acid solution, her improvement was rapid, and at the end of two weeks she was allowed to go home, continuing the same treatment. While here she stayed with friends and occupied a room with a young lady of the family; shortly after her going home she became much worse, in spite of the continuance of the same treatment. She came back to me again and with no change in treatment after a short stay, was sent home, practically well; only a slight haziness of corneæ remaining.

December 6. She again came to my office, with her eyes as bad as ever. Corneæ were nebulous, with punched-out necrotic looking ulcers. After examining her eyes, I elicited the following history:

Lizzie D., age 15 years.—"Began to menstruate something over a year ago; about two weeks before this, commenced masturbation, and continued it occasionally until last April when I did it very often, nearly every night; at this time my eyes began to pain, became inflamed and sore and remained so until I consulted you in June. While staying in Michigamme I was not alone nights and did not practice my habit; when I went home I resumed it, and my eyes got sore again."

When she practiced it her face would become hot and flushed and her head would ache next morning and eyes would pain and be more sensitive to light.

Her treatment was ordered to be resumed, and she was sent home with a lecture on the subject of her secret sin, and injunctions to discontinue it, which she promised faithfully to do.

Case IV.—This case differs from the preceding ones, both in the character of the irritation and the result produced. A year ago an exceedingly bright precocious child of five years was brought to me by his physician. The little fellow was afflicted with a diplopia which annoyed him sorely; he had been seen by a number of competent ophthalmologists and had had several pairs of glasses fitted, but with no benefit. By some a graduated tenotomy had been advised. His physician, a man of rare scientific attainment, had been unable to detect any intrinsic cause for the trouble, and had reached the conclusion that the phenomenon was caused by some reflex irritation; after careful examination of the case I fully

concurred in his opinion, and search was made for the source of the trouble. It was found that the child would often act as though there were some irritation of his privates. Examining carefully, it was found that the prepuce was firmly adherent around the corona glandis, and that back of this there was extreme sensitiveness; a separating of the parts was advised and subsequently made by his physician, who found on freeing the prepuce a considerable collection of decomposing smegma. This was removed and in two weeks the diplopia had disappeared and with it much of the nervousness which the child had previously manifested.

The foregoing cases only serve to illustrate anew the mutual interdependence of even remote parts of the body, and how they may be thus brought into intimate relation to each other through the mechanism of the sympathetic nervous system. In cases 1, 3 and 4, the relation of cause to effect is clearly shown. The occurrence of subjective or even objective nervous phenomena due to reflex disturbance is not infrequent; but in three of the cases cited reflex irritation seems to have been the exciting cause of serious inflammatory trouble. I am of the opinion, however, that in the first three cases, the inflammatory condition was secondary—the continuance of masturbation, produced reflexly, a congested state of the conjunctiva and contiguous mucous surfaces, through the sympathetic. From the hyperæmia resulting came increased lachrymation and sensitiveness to light and the blepharospasm thus brought about, caused the corneal trouble as the result of undue pressure. It is probable that in the first three cases there was an inherent tendency to ocular trouble. In case 3 there certainly was as in her the strumous diathesis was strongly marked.

The deductions to be drawn from these cases are obvious to the ophthalmologist. It should teach him, in the midst of enthusiastic study of a part, not to lose sight of the whole, and to remember the possibility, not to say probability, of extrinsic as well as intrinsic causes for local troubles. Especially is this illustrated in case 4.

These cases have made such a profound impression on my mind from the clearly marked relation of cause to effect, that when in the future I may meet in young people such cases marked by such sudden and apparently causeless recurrences, I shall speedily inquire into the use or abuse of the sexual apparatus.

AN UNCOMMON SEQUELA OF AN INTRA-NASAL OPERATION.

By M. D. Lederman, M. D.,
Of New York.

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Although untoward symptoms do not frequently occur after surgical treatment of the nose, nevertheless we occasionally meet with unpleasant after effects. Adhesions sometimes form after the removal of an ecchondrosis; a coryza or a follicular amygdalitis may follow the application of the galvano-cautery; excessive granulations may sprout when the necessary treatment is neglected; perforations of the cartilaginous septum have followed the too heroic use of the trephine; but a septal abcess consequent upon a simple saw operation for the removal of an ecchondrosis is not a frequent result.

It has been my unpleasant experience to have witnessed such a disagreeable sequela. The patient was treated at one of our well-attended clinics, where unfortunately, the necessary time cannot be allotted to the individual case, owing to the large number in attendance. Probably this simple fact may partially have been the instigator of the suppurative process, inasmuch as the operator was not sufficiently cautious in the disinfection of his instruments.

Before going further, I must add that the instruments necessary for these operative measures, are generally placed into a five per cent. (5%) solution of carbolic acid; but it is quite doubtful, if the mere dipping of an instrument into the solution, after being once in use, causes it to become aseptic.

The question may arise, although the patient gave a negative history, whether this complication was the result of the patient's nasal cavities being influenced by some unforseen process. This painful condition certainly proves conclusively, that the after-treatment of nasal operations is an important element in securing desired results.

I herewith give the history and treatment of the case under consideration:

Miss D. H.; twenty-two (22) years old; born in Germany; a domestic; well nourished; complained of fullness of the throat, and since childhood had repeated attacks of tonsillitis. About a year ago tonsils were excised, and the throat affection was somewhat benefited. The patient came under my observation about a month ago, with an attack of follicular tonsillitis, which quickly subsided under the usual treatment. On examination of the nose, I found an extensive ecchondrosis of the septum, on the left side, extending posteriorly about an inch and a-half, and projecting into the inferior meatus. Operation was advised, and the patient returning in a week, the nasal obstruction was removed by means of the Payne saw. Aristol was insufflated, and a two per cent. (2%) solution of carbolic acid was prescribed to be snuffed up the nose every hour. Patient experienced some relief from the operation, but as there still remained some obstruction, I operated for the second time, about two (2) weeks later; the wound resulting from the first operation having healed kindly.

At this sitting I found considerable difficulty in sawing through the remaining growth. The piece removed was an exostosis, and my patient expressed her delight on being able to breathe so freely. The same after treatment was given, and the pleasant effect was enjoyed by the young lady, for three (3) days. On the fourth day following the second operation, the patient noticed that she had difficulty in breathing, accompanied by severe lancinating pains of the nose and ear, with unbearable headache, especially on the right side, (the left side being the one operated upon). Toothache with elevation of temperature, and chills were also experienced.

On Jan. 24, 1893, four (4) days after the first manifestation of her untoward symptoms, I examined the patient, and found the external parts considerably swollen, and a full blown septal abscess of the right side, extending over the anterior portion of the cartilaginous septum, and posteriorly about an inch and a-half completely occluding the nasal chamber anteriorly. The abscess was incised and Miss H. experienced great relief from consequent discharge from pus. Up to this time, from January 19th, the patient had not partaken of sufficient nourishment to permit the performance of her usual duties, and was severely prostrated. After the abscess was opened, aristol was again insufflated, and a solution of carbolic acid (2%) was once more ordered.

January 25. Patient slept last night for the first time since

January 19th, and was able to take some food; the nose was still obstructed, and would not allow the snuffing up of the carbolic solution. Fluctuation was again found, and free incision repeated. Fully two (2) teaspoonsful of pus exuded. Swelling was found on the left side of the septum, anteriorly; this was also incised, but no pus made its appearance. Both nostrils were thoroughly cleansed with an antiseptic spray, but the mucous membrane became rapidly swollen, and interferred with nasal inspiration. Expiration, however, could be accomplished with some little effort. Probing revealed no further pockets of pus, so europhen was blown into both nostrils, and iodoform gauze loosely packed into each side. Patient experienced no pain, and was ordered to apply cold applications to the nose, to lessen the swelling.

January 26. The external swelling was markedly reduced, and patient passed a good night; no pain felt. Examination revealed the mucous membrane still bulging on right side, obstructing passage and not allowing inspiration on that side. Condition of left side somewhat improved. Breathing possible to some extent, but materially interfered with. Expecting to find an accumulation of pus, I again incised the fluctuating mass on the right side, but no pus followed the incision. Blood flowed freely and the bulging rapidly subsided. The nasal chambers was then douched with a two per cent. (2%) solution of carbolic acid, both anteriorly and posteriorly. A piece of iodoform gauze, large enough to keep the incision patulous and permit of sufficient drainage, was introduced into the site of the operation, and no further treatment ordered, except to keep the opposite side cleansed with the carbolic acid solution.

January 27. The external swelling was much better. The iodoform gauze was removed from the wound, the appearance of which was healthy. No signs of pus were observed. Both nasal cavities were well cleansed, and an antiseptic was prescribed. Left side improved.

January 28. The mucous membrane still protruded, although no pus was found. Pain was entirely absent. Patient complained of complete occlusion of the right side. I finally introduced a Goodwillie soft rubber tube, oiled with a solution of europhen, containing forty-eight (48) grains to the ounce of benzoinol. No further treatment given at home.

January 30. The tube was removed and the wound found almost entirely healed, with considerable air space. Patient immediately stated the freedom she experienced in breathing.

Some swelling still existed on the upper portion of the septum. Antiseptic wash ordered. Patient left, feeling much improved. Did not see Miss H. again until February 4, when upon examination found the wound entirely healed without any indication of her disagreeable experience, and with increased breathing facilities, especially noticed on the right side.

Obtaining such a pleasant effect from the wearing of the tube for so short a duration, while bearing in mind the congested condition of the turbinated bodies and septal mucous membrane, suggests the possibility of acquiring beneficial results, in persons who suffer from puffy turbinates, allowing them to wear the tube for detailed periods. It possesses the properties of a splint, causing by its immediate pressure an essential rest of the erectile tissues.

1029 Park Ave.

A CASE OF ACUTE SUPPURATION OF THE MIDDLE EAR ACCOMPANIED BY CONE-SHAPED BULGING OF THE MEMBRANA TYMPANI.

By Boerne Bettman, M. D.,
Of Chicago.

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By far the great majority of cases of otitis media purulenta acuta in children run their course within a few weeks without the intervention of any unusual treatment.

Occasionally, however, we are confronted with conditions which call for prompt and more decided measures.

Insufficient drainage from the tympanum, which in this disease is practically a pus cavity, may lead to serious consequences. Free escape of matter may be prevented either by the perforation of the membrana tympani, being located in the upper quadrants, or by an opening too small to permit free egress of the inflammatory product.

Pollitzer, Schwartze, Urbanschitz, and other authorities have

called attention to these complications, and have advocated operative measures.

When these small perforations are situated at the apecis of nipple or cone-shaped bulgings of the drumhead, snaring of this part of the membrana tympani is recommended. If, however, they appear in the upper segments of the membrana tympani, a new artificial opening in its lower half is advised.

Hartman regards these teat-like projections in a more serious light, and when accompanied with other pronounced symptoms of mastoiditis as an indication for opening the mastoid process.

An early diagnosis of these complications, with the introduction of the proper measures, may prevent much suffering and lead to quick resolution.

The following case is a forcible illustration of my introductory remarks:

A few weeks ago, my friend, Dr. E. J. Doering, kindly requested me to take charge of a little patient, Eddie G., aged nine years, whose left ear discharged after an otalgia of short duration. The otorrhœa had lasted four or five days prior to my first examination.

Pain and fever has entirely ceased and copious discharge of creamy pus filled the outer ear.

After cleansing the parts the membrana tympani showed a uniformly bright red appearance; in the lower posterior quadrant a pulsating reflex was visible.

Further details could not be observed.

I ordered instillation of boric acid subsequent to a thorough cleansing.

Quiet and soft diet were insisted upon. On the following day the boy complained of pain in the ear, also when percussing over the tip of the mastoid.

The child was put to bed and hot cloths were applied over the ear and mastoid mornings and evenings for two days.

The discharge gradually ceased, pain and febrile conditions disappeared. Soon the congestion diminished sufficiently to disclose in the region of the pulsating reflex a cone-shaped bulging of the membrana tympani with a small opening at its apex.

The tip of the cone rested on the floor of the outer canal, preventing the discharge from the middle ear. I lifted the elongated nipple and pus flowed forth.

During the day there was scarcely any secretion in the outer ear; in the morning, however, after a night's rest, it was completely

filled; the recumbent position in bed, no doubt, permitted the cone to drop away from the floor of the external auditory canal, and thus favored the exit of pus.

Believing free drainage to be absolutely necessary to prevent mastoid complications, I determined either to snare off the projecting part of the drum membrane, or to enlarge the opening with a knife. Twice I attempted to remove it with a Blake's snare, but failed, as the cone retracted when I drew in the loop. I therefore administered chloroform, and under narcosis slit the cone-shaped bulging from apex to base.

It immediately collapsed, followed by trifling bleeding. Three days later the perforation had healed.

Hearing soon returned to its normal condition.

Venetian Building, suite 1008 to 1012.

CONGENITAL HIATUS IN THE POSTERIOR PILLAR OF THE FAUCES ON ONE SIDE.

By John Herbert Claiborne, M. D.,
Of New York.

In the American Journal of Medical Sciences, for April 1885, p. 495, I reported a case of hiatus in the anterior pillar of the fauces of one side, that came under my observation in the private practice of Dr. Emil Gruening, of New York. The following case is similar to that one in many respects:

R. W., aged 45 years, of phethoric habit, a free liver, consulted me on account of wax in his ear. At his request I examined his throat and nose. He had hypertrophic rhinitis, especially of the middle turbinated bones. His pharynx was remarkably healthy. His tonsils had been completely excised.

He stated a physician had used the galvano cautery in his nose, but not on his pharynx or tonsils. Solution of nitrate of silver had been used on his pharynx.

In the posterior pillar of the fauces on the left side, about one-sixth of an inch short of a line let fall from the left edge of the base of the uvula, there was a hiatus, whose long axis ran downwards and outwards.

When the soft palate was elevated the long axis of the hiatus was apparently increased; when the soft palate was relaxed its transverse diameter was distinctly increased so that the opening became almost elliptical. The length of the long axis when the palate was relaxed was about three-eighths of an inch, the diameter of the short axis under the same condition about one-sixth of an inch.

With the soft palate in a condition of extreme elevation, the hiatus became a furrow, which could not be detected except by careful observation. In the condition of relaxation of soft palate the long axis of the hiatus was almost horizontal. A narrow strip of palate about one-eighth of an inch broad constituted the free border of the hiatus.

The patient had had the syphilis 25 years before, but his symptoms he states were restricted to a maculo-papular eruption and a node upon the right shin. He had no sore throat during the en-

tire time he was treated, nor has he had a sore throat in his recollection since he contracted the syphilis.

There were no signs of cicatrices anywhere in his throat and the edges of the hiatus were smooth, natural in color and rounded. That the case is one of congenital hiatus I have no doubt. The complication of syphilis raises no doubt in my mind, because of the character of the defect, and the perfect reliability of the patient.

In the Archives of Otology, vol. xxi, No. 1, 4, 1892, Max Toeplitz has collected the literature extant upon this subject. He himself reported a case in which there was symmetrical defects in the anterior pillars.

Including his own case, the record amounted to seven; to this I now add the one above described. In a note Toeplitz says; "Another case which was presented to Lefferts' class at the College of Physicians and Surgeons, N. Y., April 18, 1890, has been finally communicated to me by the author (Lefferts), together with a third unpublished case, with two *round* openings."

A CASE OF ADHESION OF ONE-HALF OF THE SOFT PALATE TO THE PHARYNGEAL WALL, TOGETHER WITH ABSENCE OF UVULA.

By John Herbert Claiborne, M. D.,
Of New York.

Lewis Mont, aged 12 years, presented himself at the North Western Dispensary Eye, Ear and Throat Department, on account of trouble with his nose and throat.

He was a meager boy of clayey complexion and superannuated appearance.

He spoke with a curious intonation that I am unable to describe. Examination of the nose revealed severe atrophic rhinitis.

The headmirror showed that the soft palate on the right side from the center of the velum to the level of the commencement of the middle third of the tonsil, was held to the pharyngeal wall by cicatricial tissue. The other side was free. The uvula was lacking and the cicatrical tissue commenced at the point where it should have been. The teeth were serrated, but there was no sign of the Hutchinson notch. I was unable to get any definite family history.

10 East 28th St.

A CASE OF KERATITIS DENDRITICA.

By John Dunn, M. D.,
Of Richmond, Va.

Jan. 9, 1893. Mrs. T., 31, complains that for the past week her right eye has felt as if there were something in it, which scratched the ball every time it moved. The pain in the eye has been excessive. Treatment has been poultices. Examination: photophobia excessive; slight catarrhal conjunctivitis with discharge; viewed directly, the cornea shows evidence of slight haziness at a point near its upper edge centrally, apparent width of haziness 2 mm. When the pupil has been dilated with cocaine and atropine, and the cornea is viewed under a + 20 D. lens, the following condition is found to exist: There is a fine, irregular line of ulceration, with branches shooting from it; this line divides the cornea into two nearly equal parts; it extends from a point about 2 mm. from the corneal margin below, centrally upward to a point about the same distance from the upper corneal margin. This ulceration, if viewed from directly in front of the cornea under + 20 D. sph. lens gives the following picture:

The central line, and the lines leading to the branches are very fine, sharply cut and distinct, although there is a narrow area of corneal disturbance surrounding them, as though there were an increase of fluid in the corneal layers here. Viewed from the side, the branching of the ulceration is not so distinct, but the whole gives the appearance of a long, narrow area of corneal infiltration, while along the lines are various larger areas as though the diseased process had massed itself.

The rest of the cornea is perfectly transparent, showing no evidence of infiltration. The pain from the corneal ulceration is severe enough to prevent sleep or work. Solution of cocaine and atropine ordered. Applications of boiling water to the lid several

times a day. Bichloride of mercury compress. Syr. ferri. iod. internally.

Jan. 11th. The conjunctivitis has been much improved by the hot applications. The appearance of the ulcer is much the same; shows no tendency to spread. Eye is still the source of great discomfort. Patient has been annoyed lately with discharge from the nose, examination of which shows that the mucous discharge is thinner than usual and has some odor. Tendency to slight inflammation about the entrance to the nose. Patient's health has failed noticeably within the past few months. Touched the ulcer with two per cent pyoktanum solution. Pil.: Zinc phos. gr. $\frac{1}{10}$, t. i. d.

Jan. 13th. Patient suffered from severe neuralgic pains in the eyelids of right eye on the afternoon of Jan. 11th. Has had no pain in the eye. Examination of the skin of the lids shows it to be the seat of several small, well-defined, shallow, ulcerated spots, about the size of a pin's head; there are four of these spots on the lower lid, three on the upper. There seems to be no general inflammation of the skin of the lids, although the skin is somewhat reddened in the immediate proximity of these small ulcer pits. The severe pain that accompanied the appearance of these ulcers shows that the attack is one of herpes zoster.

Jan. 24th. The erythema about the small ulcerated spots on the lid has disappeared. The ulcers, though healed, remain as minute, white, sunken scars. The eye has, however, continued very painful; neither dry nor moist heat combat successfully the pain in the ball, which pain is referred chiefly to the outer half of the ball. Photophobia extended to the other eye two days ago. Patient has lost all control of the right upper lid. Although appetite and general health have improved much, the ulcer shows no tendency to heal. On Jan. 23d applied eight cell current from a galvanic battery. At first patient could not perceive the current—one pole being on the nape of the neck, one on the right eye through the closed lids—after two or three minutes the eye began to "burn," and "smarted so" that I was obliged to reduce the current to five cells; this was continued for several minutes longer. As the immediate result of these applications the pain about the eye ceased in a great measure, and the patient was able to open the eye and the photophobia was much less marked. On the upper and lower lids of the left eye the areas which were involved in the herpetic attack of Jan. 13th became again erythematous, but not painful. The skin of the entire lids did not show this erythemia,

For about eighteen hours following the application of the electricity the patient had little trouble with the eye, and when she came to my office this morning she could, with considerable ease, partly open the right eye. Six-cell current was applied this morning for ten minutes, at the end of which time the eye was again smarting considerably, and the erythematous condition of the lids, which had disappeared since yesterday, was again reproduced. After removing the poles the eye quickly became comfortable. Zinc phosphide stopped, and quinine, three grains, t. i. d. ordered.

Jan. 30th. Daily application of ten minutes' duration of the galvanic current, five cells, were made until January 28th; the improvement in general condition of the eye has been marked. On Jan. 27th there was a slight return of the pain for a few hours. This disappeared after the current had been applied on the 28th. To-day the patient says that there is no longer any pain about the eye. She has removed the bandage, and there is only a slight photophobia. Examined under a + 16 D. lens the branched appearance of the ulcer is seen to have disappeared. The ulceration itself may be said to be healed, the healing having taken place from the ends, especially the lower end. The cornea along the central line of the original ulceration has, under + 16 D. lens, somewhat the appearance of ground glass. With the naked eye a slight linear opacity of the cornea can be seen. Applied a current of five cells for ten minutes.

Feb. 11th, 1893. There has been no trouble with the eye since the patient was last seen, Jan. 30th. The cornea, when viewed under a + 20 D. sph. lens, is still slightly opaque along the central line of the ulcer, showing that the ulceration had extended into the corneal tissue proper. Traces of the herpetic ulcers on the lids can still be seen as minute, white, circular scars. There is no inflammation, however, present.

This case has been thought worthy of report for two reasons: First, because it shows from the later appearance of herpes zoster of the lid the nervous origin of the corneal ulcer; secondly, because it seems to point to the use of the galvanic current as a means of alleviating the unendurable pain that accompanies this form of ulceration. In looking over the authorities to gain some information as to the best method of healing this affection, keratitis dendritica, I find that one text-book advises eserine and a bichloride wash; another atropia and bandaging. Although keratitis dendritica is local in its manifestation, I am led to believe that it is the result of constitutional derangement. Thus in the case of

Mrs. T., she always enjoyed the best of health until the past few months, during which time for some unknown reason her appetite has failed, she has lost flesh, and her health has failed generally. Mrs. T. was given syrup of the iodide of iron, twenty drops three times a day, and zinc phosphide pills, aa. gr. $\frac{1}{10}$, one pill three times a day. Under these medicines her appetite returned, and with it her strength in a great measure. They, however, failed to relieve the painful condition of the eye. The pain was so constant and so annoying that more than once I was tempted to have resort to the galvanic cautery. I am glad I did not use it; I believe it would have proved ineffectual as a means of relieving pain, and would, further, have increased the opacity of the cornea; and I can see no indication for its use in this case other than as a possible sedative. Hot applications, both dry and moist, failed to relieve the pain for more than a short while at a time. Hot applications were, however, used during the whole existence of the ulcer, and with the aim of stimulating the cornea to a complete filling in of the ulcerated area. At the beginning of the trouble cocaine and atropine relieved the pain temporarily, but as the ulcer grew older these failed to relieve the photophobia, although they still were pleasant to the eye. A moist bandage was kept constantly over the eye, from which there was no discharge other than lachrymal. The ulcer was at no time cloudy, as is the case in infected ulcers of the cornea; nor did the ulcer show any tendency to spread beyond its original limits save in a very slight swelling of the corneal tissue about the branches of the ulcer.

The galvanic current was not applied until the fifteenth day, when its effect as a sedative was immediate and very marked. Whether it would have had a similar effect had it been tried sooner, I cannot say. The current was obtained from five cells of one of the 24-cell Dry Chlorid Batteries; the exact strength I did not measure. One pole was placed on the nape of the neck, one over the closed lids of the affected eye. For the first few minutes the patient said she could not feel the current; afterwards the eye began to smart and the current became sensible, increasing in its subjective effects, and was continued about ten minutes, or until the patient complained that it was decidedly painful. Applications were made, thereafter, daily; the condition of the eye constantly improved. The galvanic current has been used for herpes zoster in other regions, although with varying results.

OPHTHALMIC MEMORANDA.

By G. E. de Schweinitz, M. D.,
Of Philadelphia.

CLINICAL PROFESSOR OF OPHTHALMOLOGY, JEFFERSON MEDICAL COLLEGE; OPHTHALMIC SURGEON, PHILADELPHIA HOSPITAL.

Case I—*Gumma of the iris; secondary cataract; preliminary iridectomy followed by extraction; glaucoma; recovery with excellent vision.*—Robert Kingsberry was admitted to the Ophthalmic Wards of the Philadelphia Hospital on the 28th of December, 1891, presenting the following symptoms: In the right eye the cornea was hazy, and a large yellowish-white mass, not crossed by vessels, which pushed its way towards the ciliary border, partially filled the anterior chamber, at the bottom of which a layer of pus had collected. The other eye was similarly affected, the deposit growing from the iris having a whitish rather than a yellowish-white appearance, and also a tendency to spread toward the ciliary region. There were violent photophobia, chemotic conjunctiva and swollen lids.

Shortly after admission, the patient exhibited a curious type of delirium, characterized by a fixed delusion of persecution, terminating in an irregular type of delirium tremens. The mental condition of the patient was such that an exact clinical history was not obtained, nor was the date of syphilitic infection, which, however, was undoubted, accurately determined. It probably occurred about two years before the gummata appeared in the iris.

After the usual treatment for such condition, the violence of the inflammation gradually subsided, the eyes became quiet, but the irides were atrophic and well-marked scars were visible at the spots formerly occupied by the gummatous deposits, both pupillary spaces being partially occluded.

He remained in the Hospital for some time, and then disappeared, returning again in the fall of 1892. When he was examined, November 1, 1892, the pupil of the right eye was irregular, partly occluded with lymph and iris pigment, a broad scar being visible in the iris to the nasal side; ophthalmoscopic examination was impossible. Vision equalled counting fingers at one foot.

In the left eye there was a similarly scarred iris, a somewhat larger pupil, behind which a white cataract was visible. The light perception was good in all parts of the field.

About two weeks before, namely, on the 16th and 20th of October, my colleague, Dr. Gould, had made two discissions, without, however, causing perceptible absorption of the cataractous lens. Dr. Gould very kindly referred the case to me when I came on duty, the first of November, for further operative interference. Therefore, as two well-considered and carefully performed discissions had been practically without effect, it was deemed advisable that a formal extraction should be undertaken. On the 7th of November I performed a small, upward iridectomy, obtaining a clear coloboma, save a slight irregularity at the lower margin, marking the position where the iris had been attached to the capsule of the lens. The healing was perfectly smooth, and on the 28th of the same month, the lens was extracted without difficulty, except that the capsule was found exceedingly tough. No accident occurred during the healing, and on the fifth day after the operation the bandages were removed and the patient allowed the liberty of the ward, with the protection of a shade.

On the 13th of December the patient began to complain of pain in the eye, which became watery, and a small spot of infiltration appeared in the lower margin of the cornea. Atropine was instilled for one day at intervals of four hours, but on the following day he was found in a pitiable plight, complaining of intense pain through the entire left side of the head. The lids were œdematous, the conjunctiva slightly chemotic, the cornea hazy throughout its entire surface, and the T. + 2. Vision amounted to faint light perception.

He was freely leeched from the temple; eserine drops, one-half grain to the ounce, together with a 2 per cent solution of cocaine were instilled into the eye every two hours, and full doses of chloral and small doses of morphia were administered at bed-time. The following day he was better, but two days later he had a relapse. The house surgeons, Dr. Montegut and Dr. Marcus, repeated the leeching and increased the number of instillations of the eserine and cocaine solution. In addition to the hypnotics at night, mercurial inunctions were ordered, two drachms being rubbed into the skin of the abdomen during each twenty-four hours. By the end of the month he was vastly improved and could readily tell the time of day on a watch. After this his recovery was uninterrupted. The eye became white and quiet, the cornea transparent, the colo-

boma only slightly obstructed by a few strands of capsule, and the vitreous perfectly clear. The disc is a vertical oval of good color, and no splotches are visible in the fundus. In February of the present year his vision, with + 12. spherical, is $\frac{6}{12}$ and part of $\frac{6}{6}$, and with + 16. s. he reads Jäger I, quite readily.

Remarks.—This case seems worthy of record on account of the somewhat remarkable series of diseases, as well as surgical events, experienced by this patient. The gummatous irido-cyclitis was followed, as an almost necessary consequence, by secondary cataract, and the extraction of this without accident was of itself a gratifying feature. The development of a series of symptoms, which may with propriety be designated as glaucoma after extraction, are not so readily explained. There is, however, a slight entanglement of the iris in the upper and inner part of the operation scar, and it is quite possible that the use of atropine for one day, when the symptoms first developed, was a piece of injudicious therapeutics, which determined the rapid rise of tension within a few hours and the violent pain which followed. The speedy relief of the condition under the influence of cocaine and eserine, aided by copious bloodletting, is interesting, and I cannot help thinking that the full doses of chloral, together with a rapid mercurialization were efficient aids in the happy result.

Case II.—*Nuclear cataract; artificial ripening by direct trituration; extraction, followed by prolonged and at times violent dementia; recovery of reason and good vision.*

Diller Shirk, aged 59, had been suffering with cataract for about twenty months, in each eye, nuclear in character, very slow in development, and most marked upon the left side. In addition to his visual defects, he had organic heart disease, with loud, double murmurs over the aortic cartilage, and almost constant, and at times serious cardiac vertigo. The urine contained albumin and casts. He was greatly depressed by his general condition, but especially by his inability to read.

As the growth of the cataract was so slow, on the 14th of November, 1892, a preliminary iridectomy was performed and the capsule of the lens triturated with a small horn spatula. Advance of the cataractous process began at once, and by the 16th of December the lens was of a thick white color in its entirety. On the 30th it was extracted through a 3 millimeter flap, resulting in a perfectly black pupil and the ready counting of fingers.

For two days the patient was in perfectly good condition, but on

the night of the third day after the operation he became delirious, got out of bed, struck his eye, burst open the wound, causing a blood-clot which half filled the anterior chamber. He now passed into a state of dementia, often of a violent character, necessitating constant watching. Emanciation became marked; there was involuntary passage of urine and feces; liquid food was administered with difficulty; the pulse was exceedingly feeble and irregular; some hypostatic congestion of both bases of his lungs became evident, and thick sordes formed on the teeth and tongue.

The treatment consisted of free stimulation with whiskey, condensed and for the most part liquid nourishment, and full doses of strychnia and digitalis. The drugs, however, appeared to have no influence upon the circulation, and consequently the resident surgeon, Dr. Montegut, began the administration of nitroglycerine, pushing it to its full physiological effect. Very soon improvement began, and by the last week in January he had recovered sufficiently to sit up for a few hours of the time, although he was still somewhat demented and required watching. This improvement has continued, and at the present writing, February 20, his mental derangement has largely disappeared, he eats solid food with avidity, his nutrition has improved, and in all respects he has practically recovered. Curiously enough, during the whole of this time there was no unfavorable symptom in the eye. The blood-clot caused by the blow was speedily absorbed, and save some slight conjunctival redness which lasted for a few days, there was no reaction. The coloboma is clear, the eyeground healthy, and the vision with his glasses equals $\frac{6}{30}$, and he reads hesitatingly 0.75 type.

Remarks.—This is a very good example of the cases which have been denominated "insanity after operations," and of which there are a number upon record. The occurrence of such phenomena after operations in general, and especially gynecological operations, has been noted many times, and also, but less frequently, after extraction of cataract. It seems likely that mania or dementia, is most apt to occur in an individual whose mental balance is not entirely secure before the operation, and in the case which has been described, the patient's anxiety, both on account of his cardiac and ocular conditions, culminated after the extraction in the symptoms which have been described—an anxiety which had long been nursed by previous misfortune, inasmuch as his wife had been insane, and during one of her paroxysms had committed suicide. Of course this condition is entirely distinct from the

traumatic delirium which sometimes succeeds an excessive reaction after injury or operation, and is most common, I think, in those patients who have indulged in alcoholic excesses.

CASE III.—*Large pterygium and moderate symblepharon following a lime-burn; removal and successful transplantation of a Thiersch's skin graft upon the bulbar conjunctiva* (*Hotz's operation*).

Albert Block, aged 22, an inmate of the Ophthalmic Wards of the Philadelphia Hospital, sustained a lime-burn of the right eye two years ago. This resulted in the formation of a large, fan-shaped, fleshy pterygium, which extended in the usual position from the plica, and was attached as far as the centre of the cornea, occupying its lower and outer quadrant. From this the fibres extended to the lower lid, binding its inner surface to the bulbar conjunctiva in a mass of cicatricial tissue 8 millimeters in length, passing outward from near the inner angle, but not quite up to the ciliary margin. (Vide Fig. I.)

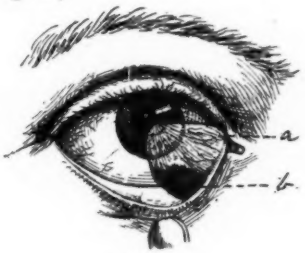

FIG. I.

Pterygium and symblepharon: a, fleshy pterygium; b, portion attached to lower lid, forming a small symblepharon.

On the 7th of November, 1892, the entire mass was carefully dissected away, leaving a large, bared area on the globe and inner surface of the lid. A Thiersch's skin graft was then carefuliy cut from the inner side of the forearm of the patient, with which the gap was covered according to the directions given by Hotz (Transactions of the Ophthalmological Section of the American Medical Association, Detroit, 1892, p. 185). This graft was 2 centimeters in length and nearly a centimeter in breadth. A smaller graft was placed deep down in the sulcus. The eye was bandaged antiseptically and undisturbed for forty-eight hours.

At the end of this time the graft lying on the bulbar conjunctiva was firmly attached; that in the sulcus, however, had rolled up and had to be trimmed away in great part. For a long time there

was a good deal of accummulation of a whitish secretion in the corner of the eye, partly mucus and partly epidermal cells. The eyeball is now movable in all directions. The graft still remains white and can be distinctly seen in its position, having shrunken to a size 8 by 14 millimeters. It has accomplished in a most satisfactory way the purpose for which it was planted. The eye, which had previously been irritable, became quiet, and although the haze in the cornea forbids accurate vision, this has distinctly improved, fingers being counted readily in all directions, while previously only the motion of the hand was discerned excentrically. From a cosmetic standpoint there is little to be desired.

Remarks.—Dr. Hotz's valuable suggestion to employ Thiersch's skin grafts after the removal of large pterygia found ready application in the present case. Not only did the graft supply the deficiency caused by the removal of an ungainly and unusually large pterygium, but it also prevented the re-attachment of the symblepharon. It should be stated, so far as the last-named defect is concerned, that probably much of the success of the operation depended upon the fact that the symblepharon did not bind down the lid entirely up to the ciliary margin, and, as is well known, even the smallest freedom of this margin is a great gain in securing success in an operation of this character.

CASE IV.—*Cornu cutaneum of the right upper eyelid.*

Edward Connor, aged 40, presented himself for treatment in the Jefferson College Hospital, February 17, 1893, on account of a cutaneous horn, 12 millimeters in length and 4 millimeters in thickness, which grew from the ciliary border of the right upper eyelid near the outer commissure. (Vide Fig. II.)

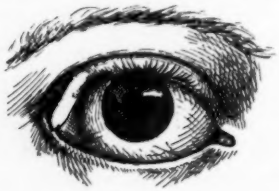

FIG. II.

Cornu-cutaneum, twelve millimeters in length and four millimeters in diameter.

The growth had first made its appearance about two years ago, and, according to his statement, had been removed three times, with recurrence on each occasion. The present growth had been developing five or six months. It was entirely painless, of a yellowish-red color, and of the general consistence of thickened epidermis, the

somewhat conical end being capped with a few horny scales. The horn was excised and the portion of the lid from which it grew thoroughly cauterized with chloride of zinc.

Remarks.—This cutaneous horn has followed the rule of similar excrescenses in that it appeared in a patient of middle life and was unattended by pain. In spite of its recurrence there was nothing on the lid or at its base suggestive of epithelioma, and there is no reason to doubt that the microscope will show that it is composed of a hyperplastic growth of the mucous layer of the epidermis.

1401 Locust St.

ECCHYMOMA CONJUNCTIVÆ AND ECCHYMOSIS OF THE LIDS FROM COMPRESSION OF THE CERVICAL VESSELS.

By Matthias L. Foster, M. D.,
Of New York.

ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL.

A man, thirty-two years of age, recently came into the clinic at the Manhattan Eye and Ear Hospital with subconjunctival hemorrhage in both eyes, the greatest amount in the right, and with the lids of both eyes ecchymosed, to the greater degree in those of the left. Vision in each eye $= \frac{20}{20}$. No lesion within either eye. He gave the following history:

On the day before he lost control of the elevator on which he was working and was compressed between it and the ceiling as in a vice. His back was pressed against the ceiling, his head was flexed on his chest and bent partially to the right, his hands and feet cramped beneath him. In this position he felt almost strangled and was unable to call aloud for assistance, although he made severe efforts to do so. His sensations, as he described them, were that his muscles, especially of the face, grew rigid and swollen. This sensation was increased by each effort to call aloud until it became almost unbearable. Finally he succeeded in liberating one hand and tapped for assistance.

When taken off the elevator his eyes felt as though they were bulging from their sockets, and his entire face was swollen, particularly beneath the eyes. There was no epistaxis or other hemorrhage, internal or external, as far as known, aside from that above described, with the exception of some petechiæ on the chest which

disappeared within three days. The urine and alvine discharges were observed without result. With the addition of some bruising of the back these were all of the injuries which resulted from this accident.

Probably the return of the blood from the face was interfered with by compression of the veins in the neck, caused by the peculiar position of the head, and the intravenous pressure was increased by each effort to speak, but in this case we would usually expect the capillaries of the nasal mucous membrane to give way first. Why the subconjunctival capillaries and those of the lids should have been the ones to give way in this case is an interesting question, but one difficult to answer.

7 East 41st St.

"THE EAR OF MAN AND THE ORGAN OF CORTI."

By J. A. Maloney, M. D.,
Of Washington, D. C.

None of the organs of special sense are as complex in their structure as the ear, and of its three divisions, the internal ear has presented a problem, the solution of which has perplexed physiologists to the present day.

One great and mooted question has been the function of "Corti's organ." The Helmholtz piano string theory, as applied to that organ, has been accepted by some, and rejected by others; to my mind, it is inadequate to account for tonal differentiation, and it does not account for perception of musical tones, because some birds possess equal, if not greater perception of musical tones, and in these the "organ of Corti" is lacking.

In this article, my aim will be to prove by tentative deduction that tonal differentiation in man is not due to vibrations like that of piano strings, i. e., vibrations of an elastic body between points of fixation.

In the structure of the ear, the second and third divisions claim our attention, for the purposes of making clear a position against said theory.

In my early investigations in the domain of physiological acoustics, I was struck by the Helmholtz theory, and its acceptance by such master minds as Tyndall and Huxley. On p. 400, "Tyndall on Sound," says: "Each musical tremor falls upon this organ, selects from the stretched fibres the one appropriate to its own

pitch, and throws it into unisonant vibration" * * * "This view of Corti's fibres is theoretical, but it comes to us commended by every appearance of truth." And on p. 402: "Thanks to Helmholtz, whose views I have here sought to express in the briefest possible language." On p. 238 "Lessons in Physiology," Huxley says: "So that, when a number of vibrations of different periods, such as constitutes an ordinary musical sound, are transmitted by the tympani to the cochlea, these, as they sweep along the canalis cochlearis, throw into sympathetic movement those parts, and those parts only, of the basilar membrane with their overlying epithelium and rods of Corti, whose periods of vibration correspond to their own vibrations."

I think the piano string theory is misleading, because it has for its predicate the vibration of a string or other body between points of fixation, and in support of my views, I shall refer by analogy to the recent applications of physical laws, though evolved from the realm of empiricism.

Let us first consider the conditions met with in the middle or second division of the ear. The ossicula auditus, or chain of bones, are suspended in the chamber between the membrana tympani, and the stretched membrane at the other extremity of the chamber, i. e., the fenestra ovalis, or oval window, with tension applied and fixed through the tensor tympani, and stapedius muscles, together with the four ligaments of the malleus, the ligaments of the incus, and the stapes; the base or foot-plate of the stapes is surrounded at its edge by a lip of fibro-elastic cartilage 0.7 mm. thick, but is not attached to the fenestra ovalis, thus undoubtedly acting as a cushion.

Let us now turn our attention to the third division or internal ear, which consists of three principal parts—the vestibule, the semi-circular canals, and the cochlea, and is the seat of the termination of the fibres of the acoustic nerve, collectively, these three divisions are divided into two parts by a membranous sac, contained within the bony walls, the space without the sac is filled with perilymph, while the space within the sac is filled with endolymph.

The space containing perilymph has two membranous windows, the oval and round.

The space containing endolymph, incloses Corti's organ, which rests upon what is known as the basilar membrane, the construction of which may be stated briefly, as follows: Upon the upper surface of the membrana basilaris are two sets of pillars, an inner

and outer row, uniting above and forming a series of arches, all along the spiral, each row consisting of several thousand rods. At the junction of the pillars, the head of the outer is fitted into a depression between the head and head-plate of the inner pillar, thus forming a tunnel triangular in outline, the widest portion or base resting upon the membrana basilaris, upon the upper portion or crown of the arch so to speak, is a reticulated membranous covering, i. e., the membrana reticularis, which projects outwards from each side.

Between the membrana reticularis and basilar membrane are the supporting cells, with their apices resting upon the basilar membrane and their widest portion adherent to the membrana reticularis; resting upon these ends, and passing through the reticularis are tufts of cilia, with the membrana tectoria resting upon them.

It must be borne in mind that the terminal filaments of the auditory nerve are sent directly to these peculiar ciliated cells.

Having thus briefly dealt with the anatomy of the middle and internal ear, let us turn our attention to the waves of the atmosphere, which we call sound.

The idea generally accepted of aerial waves is as follows: When a stone is thrown into a quiet pool of water, the wave which is generated is circular, and expands itself over more and more surface, forming a series of concentric rings. Later advances made in acoustics, by such brilliant minds as Toepler, Neumann, Magnus and Hajech, we are shown that sound waves expand in a circle; that this circle should exist not only horizontally, but upwards and downwards in all directions, or that our wave ought to be bounded by a great many such circles. Bodies thus bounded are called spheres; sound waves then should be round like a globe, and we can imagine it as a hollow bubble, swiftly growing larger; wonderful as it may seem, these waves have been rendered visible.

A sound wave then is a layer of air which is more, and of another which is less compressed than the surrounding atmosphere, i. e., a layer of denser and rarer air.

This seeming digression from the subject of this paper is necessary, for, from what has been said it is evident that another kind of motion can be communicated to a row of material particles, which also will generate along them waves, but waves of a different character, and in these new waves the particles are not pushed out of line, as in waves of water or light, but at one instant are

crowded together, and afterwards fly apart, remaining, however, always in the same original line.

It must be remembered that the ear of man takes cognizance of vibrations of varying lengths, comprised within a range of eleven octaves, and about twelve times as wide a range as the spectrum scale of the eye.

Before taking up the process of audition, as it seems reasonable to me, I desire to call attention to the fact, that the membrana tympani responds to composite tones as a maximum, and to its fundamental as a minimum, in this respect being the reverse of functions from other stretched membranes. My object now, is to show that *increment and decrement of resistance or pressure is the most potent factor in audition*, in contradistinction to mass vibration through or individual excursions upon the part of the ossicula auditus, or that vibrations like that of piano strings take place in the organ of Corti. I do not wish to be thought an iconoclast by laying down such a proposition, my sole aim being to submit my views with the hope that if I am right in kind, and not degree, I may awaken further thought and investigation in this direction.

Sound waves, after their reception by and conduction through the external auditory canal, make impact upon the membrana tympani, affect the tense portion known as the membrana vibraus; this causes a to and fro motion of the long process of the malleus, this, by reason of the peculiar articulation of its head with the incus, causes increased or diminished pressure of the foot-plate of the stapes through the fenestra ovalis, thus causing increased or diminished pressure upon the perilymph, *compensation for which is made by the fenestra rotundo through its peculiarity of bulging inward instead of outward* towards the tympanum, the latter assisting the Eustachian tube to maintain an equilibrium of air pressure upon each side of the membrana tympani. The increased or diminished pressure of the perilymph now manifests itself upon the membranous partition, between it and the endolymph, imparting its motion to the endolymph, which in turn causes increased or diminished tension upon the supporting cells, thus causing excitation of the terminal filaments of the auditory nerve by the tufts of cilia surmounting them, due to the damping effect of the membrana tectoria.

From this point to the sensorium, the disturbance of which gives rise to sensations of sound, we can only say as we do of electricity, we only know it by its manifestations.

I will now present the analogue from which I have reasoned, and presented the foregoing:

The Bell telephone, now so generally used, was, and is the only mechanism which would reproduce composite tone, or articulate speech, as well as musical tones, and the secret of its success is the reproduction of speech by varying the strength of current through variation of resistance or pressure of contacts in a closed circuit. This applies directly to the transmitter, while in the receiver the same result is produced by varying the magnetic field of force, i. e., the space between the head of the magnet and the diaphragm. By this method the quality of sound (the timbre of the French and klangfarbe of the German) was reproduced mechanically for the first time.

The drawing represents, for our purposes, a telephonic circuit:

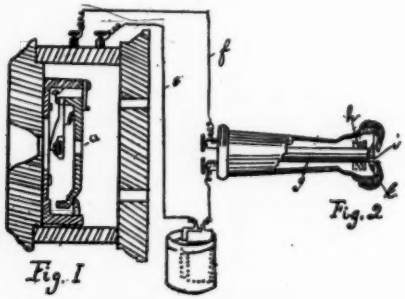

Fig. 1 represents the transmitter with diaphragm, which is tense, resting upon this are the contacts *a b*, with pressure applied and maintained by means of the spring lever *c*, the current of electricity flowing through these two points; *e*, *f*, represents the wire connections between the transmitter (Fig. 1) and the receiving telephone (Fig. 2). In Fig. 2, *g* represents the magnet, *h* the spool of wire through which the current passes, *i* the soft iron diaphragm; *k* represents the magnetic lines or field of force—though invisible to the eye are shown by dotted lines.

When a person speaks to the transmitter, the sound waves make impact upon the tense diaphragm, which corresponds to the membrana tympani, this in turn causes variation of resistance or pressure in the two contacts, which are always in juxtaposition; these correspond to the ossicula auditus, the variation of pressure caus-

ing increment or decrement of current, which corresponds to the action upon the perilymph through foot-plate of stapes, causing variation of pressure in the same; also the endolymph; the current then with its variations passing around the spool of wire (*h*) upon the magnet (Fig. 2), causes a variation of tension in the field of force (*k*), which corresponds to the supporting cells and tufts of cilia in the organ of Corti.

In conclusion, I hold there is ground for the views I have advanced, for the following reasons:

1st. The telephone performs the function of the human ear, *and is an analogue, because its function is a scientific truth*, and no other product at the hands of man ever produced a like result.

2d. The nerves in the internal ear, like nerve fibres elsewhere in the body, are entirely surrounded, and inclosed, and incapable of vibrating as piano strings.

3d. While a piano has strings representing $7^1/_3$ octaves, it is impossible to get a semblance of reproduction of either composite or other tones from impact of sound waves upon them, each string will only respond to its fundamental. This can be easily demonstrated by any one raising the lid of a piano, leaving the sounding board and strings exposed, and causing any sounds to be brought close to them, i. e., the voice by speaking, or musical instruments played near enough.

1424 Q St., N. W.

INDICATIONS FOR, AND RATIONALE OF EUSTACHIAN CATHETERISM.

By Dr. John F. Oaks,
Of Chicago.

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One of the most frequent indications of Eustachian catheterism is deafness, with or without tinnitus, due largely to defective ventilation of the cavum tympani, which occurs in chronic catarrhal otitis of the middle ear.

The rationale is as follows: It secures perviousness of the Eustachian tube; it establishes the equilibrium of atmospheric pressure in the external and middle ear cavities, with consequent reduction of hyperaemia *in vacuo*, and absorption of exudates.

It disperses and displaces intratympanic exudations *via* the pharynx, or, in case of a spontaneous perforation or a paracentesis (should that procedure be called for) into the external auditory canal.

By virtue of what might be called aural massage, viscid mucous and plastic exudates are displaced and removed from the immediate vicinity of the oval and round windows as well as the foot plate of the stapes, which tend to compromise the function of the apparatus for aerial conduction of sounds, by immobilizing or anchylosing the malleo-incudal and incudo-stapedial joints.

In acute otitis of the middle ear, when the acute pains have been relieved, the air douche may prove an important element in the treatment. If bilateral, the Politzer is to be preferred, if unilateral, the catheter should be used. As before mentioned, the hyperæmia is reduced, absorption promoted and spontaneous cure assured. Should there be a perforation, artificial or spontaneous, the exudate is dispersed or displaced with the greater assurance of an early closing of the perforation and prevention of suppuration. In chronic suppurative otitis of the middle ear, it enables us to supplement the cleansing of the middle ear cavity by irrigation or otherwise, by dislodging the pus from the crannies and hiding places and driving it out of the cavum tympani into the external auditory

canal, thus promoting more thorough disinfection and obtaining much better results from treatment than otherwise.

As to the length of time catheterism or the air-douche should be continued, and the interval of time between the treatments, depends upon the nature of the case and the results to be obtained.

In chronic middle ear catarrh, with deafness and tinnitus, it is advisable to repeat catheterization or politzerization as soon as, or better still, before the beneficial effects of the preceding treatment entirely subsided.

In the acute forms of otitis, it must be used daily, until the cure is complete.

In the chronic suppurative form, according to the progress or the exigencies of the case.

In catheterization of the Eustachian tube, I much prefer the Lucæ air bag to the Politzer bag, because of its many advantages, more especially that of continuous air pressure, and the better appreciation and more accurate observation of the auscultatory sounds, in the absence of the supplementary noises in politzerization made by the act of swallowing or phonation.

705 Venetian Building.

THE RADICAL CURE OF AURAL POLYPI.

By S. MacCuen Smith, M. D.,
Of Philadelphia.

LECTURER ON OTOLOGY AND CHIEF OF AURAL CLINIC IN JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA; SURGEON IN CHARGE OF THE EAR, THROAT AND NOSE DEPARTMENT OF THE GERMANTOWN HOSPITAL OF PHILADELPHIA, ETC.

The object of this brief paper is to consider only the growths that arise from the tympanic cavity and the membrana tympani.

Broadly speaking, polypoid tumors or granulations may be regarded as essentially the products of an inflammatory condition, being composed of connective tissue, new growth, more or less pedunculated, and covered with epithelium. A polypus may have its orgin from any part of the external canal, drum-head or middle ear; the majority, however, arise from the tympanum. Next in frequency we find them originating from almost any part of the membrana tympani, more especially from that part known as Shrapnell's membrane; and lastly from the osseous meatus.

As to the etiology of granulations and polypoid growths I believe

them *always* to be either the result of a suppurative disease of the middle ear or external auditory meatus, or to arise from caries and necrosis.

It is indeed difficult to distinguish between granulations and that still further increase or development of the same growth, which, simply on account of its size is known as a polypus.

I do not lose sight of the fact, however, that we have several varieties of polypi; nevertheless, they all arise primarily from granulations, and assume the character of either myxomatous, fibromatous, angiomatous or cystic polypi, depending entirely on the character of the surface from which they have grown, together with the histological stages through which they pass.

From the foregoing it will be seen that whenever granulations and polypi are found we are convinced that pus is certainly the cause of such pathological changes (except of course in traumatism); so simply because you do not at first find pus, you will without doubt be deceived in many cases, by accepting as conclusive the fact that it does not exist. It is not uncommon to find in cases where the tumor has been removed that all discharge ceases, and the patient congratulates himself on being relieved of these unpleasant and dangerous growths. In a short time, however, he is suddenly attacked with violent pain in the ear; perhaps vomiting sets in with more or less fever; and then all the symptoms of acute cerebral inflammation may have been established. This condition is caused from the fact that inspissated masses of mucous and pus have collected behind a wall of dried and hardened epithelium intermixed with pus, and entirely occluded the opening in the ruptured drum, consequently preventing the escape of discharge, which continues to form until the accumulation causes much pressure, and brain or mastoid complications may be the result. If granulations are the product of suppurative inflammation, and polypoid growth a still further development of granular tissue, it is then only reasonable to expect that in our endeavor to establish a permanent cure in *some* cases it is positively essential that the primary cause (suppuration) of the growth must be successfully treated. This, however, has not been the usually accepted plan of treatment, as many surgeons have been content with frequent removals, followed by ineffectual efforts to destroy the pedicle.

Every physician interested in aural diseases (and it is with much pleasure that we note the *largely increasing interest* among the profession) is only too familiar with the many cases of polypi that

consult him for relief and *cure*. These cases will give a history of having had the tumor removed many times, and then various acids and the cautery used "*to kill the root*," all of which gave only temporary relief, and the unfortunate subject, with his hearing being rapidly destroyed, is naturally disgusted with everything medical, and the branch of otology in particular. This is one of the many reasons why the practice of aural diseases has fallen so largely into the hands of charlatans. This may also account for the remarks of an eminent surgeon, who, only a few years ago, taught his class that there were "*two classes of ear diseases, one in which there was wax, and the other one in which there was no wax.*" It is indeed well for the profession in general, that we have had some *few* men who possessed the courage to fight through the dark days of otology and raise it from the odium it has so long suffered, to the high standard of science it now commands.

Fortunately the majority of cases of aural polypi will yield to the several methods of treatment advanced for their relief. When, however, after a faithful pursuance of the more ordinary lines of treatment good results are not forth-coming, it is my invariable rule to advise the removal of the membrana tympani, and one or more of the ossicles, for the cure of the discharge and as the suppuration is the direct cause of the polypus, we thereby prevent its recurrence. So long as you have confined pus, nothing else can be expected but that it will act as an exciting agent to infect adjacent parts, thereby creating increased suppuration and progressive destruction of the contiguous structures.

This is precisely what happens in some cases of polypi, where the pedicle arises from the wall of the tympanum and protrudes through an opening in the drum. Either it is removed, only to grow again; or an attempt is made to destroy the pedicle, which in reality is never touched and *can not* be treated so long as the drum and malleus are intact. It is, therefore, only carrying into practice the sound surgical principle of "*wherever there is pus leave it out*," that I now advise the removal of certain parts, in order to establish free drainage and give us an opportunity to directly treat the diseased surface.

Since following this line of treatment, the results attained by us have been most satisfactory. Suppuration is entirely cured, hearing in all cases improved, and in some made normal, and with this result secured, the polypus can no longer be reproduced. If in this way a free drainage is established, I do not find it necessary to make an attempt to destroy the pedicle, for so sure as the suppurative surface

is benefitted by antiseptic washes, etc., the exciting cause will have been removed, and the pedicle, which no longer can live without food, will atrophy and disappear.

As illustrative of the benefit derived from this line of treatment, I will briefly relate two of the many cases treated in this manner.

Miss Farley, the sister of Dr. Jos. Farley, of this city, suffered for some years from suppurative otitis media with a polypoid growth. She had been under skillful treatment for a long time, which gave only temporary relief. When she consulted the writer, the tumor protruded from the canal and she suffered much inconvenience. Under ether, given by Dr. Farley, I removed the growth, and afterwards made an attempt to treat the pedicle; she apparently received all the benefit that could be desired, except hearing did not improve. It was not long, however, until she returned with the tumor quite as large as before. It was removed several times more and every effort made to prevent its recurrence, all of which treatment seemed only to act as a stimulus and hasten its growth.

I advised removal of the drum and malleus, and from the day of their extraction, she has not had the slightest discharge and the polypus has shown no signs of recurrence. Three weeks later her hearing was found to be normal and has continued so to date (about one year after operation).

The next case I will but mention, as it is quite like the preceeding one.

Miss A. M., referred to me by the courtesy of Prof. J. C. Wilson, was similarly afflicted with polypus, and submitted to the same operation with equally good results—except that the hearing is not quite so acute. One year has elapsed since this operation was performed.

1502 Walnut St.

SOME OCULAR REFLEXES OTHER THAN HEADACHES.

By Dr. Clark W. Hawley,
Of Chicago.

Most doctors are aware that headaches are many times permanently relieved by correcting errors of refraction, but few realize that many other ills are reflex to some impaired function of the ocular machinery. Vertigo is by them attacked through the stomach or the nervous system, forgetting that it may be an ocular reflex. Meibomian cysts, styes and blepharitis are treated with yellow oxide, but the probable cause, error of refraction, is ignored entirely. A child is not progressing in school as it should, and who ever suspects the eyes, unless they are very near-sighted? An error need not necessarily be great to cause much trouble, in fact, the small ones are the most annoying and easily overlooked. The patient sees well, and says it can't be his eyes that are at fault, consequently the error may go uncorrected.

In selecting suitable cases for this study, I have only taken such as were distinctly not ocular headaches but such as were plainly reflex. They are by no means rare and exceptional, but unfortunately very common, and of such a character that very good and careful men let them go by every day.

The first case of interest to me is the pair of eyes guiding this pen. For the past three years I have suffered much from car-sickness, even on short journeys, but I never suspected it might be due to an astigmatic error, and by accident found myself cured. For an entirely different reason, a friend worked out my refraction, and to my surprise, on my first trip on the cars, I found my car-sickness had disappeared; also a musca volitans has since been much less troublesome. I was much surprised in the change in the appearance of small objects as I rode by them. I saw them more distinctly, and the appearance of a very slight mist between me and them was gone. I played "hide and seek" with the car-sickness till I was satisfied it was wholly reflex to the ocular trouble. I now recall the fact that at night I did not suffer, not seeing the passing objects outside. Had any one told me that

my trouble was due to my eyes, I should have been very skeptical. Notice how slight the error is; I am wearing—

R. E. +.25 D. cylinder axis 105°

L. E. +.25 D. cylinder axis 75°.

A very interesting case is that of Dr. S., who called at my office on a business errand, remarking that its success depended on his recovery from a very annoying vertigo, for which Dr. L. was treating him, diagnosing a stomach trouble as the exciting cause. Dr. S. said he could find no fault there, as he could eat anything and at all times. I suggested it might be due to some error of refraction; "but I can see all right," was his reply. For a long time he had had these dizzy spells, sometimes so severe that it seemed as though he would fall. To cross one of the busy streets down town was a trial at those times. He would become so confused that he would almost fall under the passing teams and cars. I gave him the following to wear constantly:

R. E. +.25 D. cylinder axis 135°

L. E. +.25 D. cylinder axis 60°.

Three months later he reported no return of the trouble, the glasses giving him relief at once. This is another case where mere chance discovered the exciting cause when his doctor might have done so.

The next case I wish to call your attention to is of a different type. You will notice that very similar errors produce entirely different reflexes in different people.

Mr. B. was sent to me by his family physician with the following history: He had been suffering from severe pain in his head; "not a regular headache, but a chronic pain, sometimes like neuralgia," was his description of it. It had been so bad of late that the doctor had exhausted every means at his command without benefit. Accidently the fact came out that his eyes were troubling him and he was recommended to see an oculist. I gave him the following to wear, with immediate relief:

R. E. —.50 spherical—.25 D. cylinder axis 60°.

L. E.—.50 spherical.

You will notice here that a very small compound myopic astigmatism of one eye caused the whole trouble. The refraction of the two eyes was not harmonious and nature rebelled, not in the eyes themselves, or about them, but at a distant point.

Mr. F. B's case is very interesting because it is a representative of a very common type of reflex trouble. From youth he has suffered with red, angry-looking eyes and lids, the base of the lashes being

continually covered with secretions. When he went away on his summer vacations, he always returned with eyes looking the worse for wear. He was very fond of music, but it was losing its charm because he found it difficult to place the notes in their proper position on the bar. He did not suffer from headaches—which fact is rather singular when you study his error. He was given this correction to wear constantly:

R. E. + .25 D. sph. ⊃ + .75 D. cylinder axis 75°

L. E. + .25 D. sph. ⊃ + .75 D. cylinder axis 105°

Now every symptom of trouble has disappeared, and on his return from his summer vacation no bad effect was visible about the eyes. He had been told he had granular lids and was incurable. His vision was apparently perfect so the cause was not suspected. The trouble was not trachoma, but a severe conjunctivitis kept up by continued effort to overcome his error. This is a very common mistake and should be guarded against by the general practitioner. By dismissing such cases with such a diagnosis at once relieves his own mind and consigns the patient to much unnecessary suffering. I have in mind now a young man whom a very good doctor of this city has told he had trachoma, when I am certain no such condition exists and all he requires for a cure is a pair of glasses, when the reflex irritation will stop. Every outward symptom, as well as the history of the case, points to a mistaken diagnosis. But the parents have such confidence in their family doctor that they will not consult an oculist. He has lost one good position because his eyes refused to stand the strain put on them.

I will now report two very instructive cases, not only because they illustrate the cure of reflex diseased conditions by correcting errors of refraction, but as well the effect it must have on the future of each. Who can measure the loss both would have suffered had they gone on to adult life without the help of their spectacles?

Z. C., age 9, when attending school had periodic attacks of phlyctenular keratitis coming sometimes as often as every two months. Called "the dunce" by teacher and pupils. She was often punished because of unlearned lessons, especially those on the blackboard. She was referred to me by Dr. A., with both eyes in trouble. Treatment and complete rest soon cured the acute attack, and while under the influence of atropine, I worked out the following correction:

R. E. + .75 D. sph. + .75 D. cylinder axis 80°

L. E. + .50 D. sph. + .75 D. cylinder axis 105°

to be worn constantly. Six months later she reported no return of

the disease, and was no more called a dunce in school. Who can calculate the value of these glasses to this little girl?

A. B., aged 8, was brought to my office to have a pair of glasses fitted before an operation for strabismus by the family surgeon who desired to do that part of the work. He was very backward in school, never averaging above 70 in examinations, and like the girl, was the dunce of his class. I gave him the following glasses to wear:

R. E. + 5 D. sph. + .75 D. cylinder axis 90°

L. E. + 6 D. sph. + .50 D. cylinder axis 90°

For five weeks atropine was kept in the eyes to prevent all close work, and as it wore away he was allowed to go to school. What was the result? The strabismus was corrected, and from that time on he was at the head of his class, never averaging less than 95 in his examinations.

70 State Street.

HEADACHE DUE TO NASAL STENOSIS.

By Dr. Edwin Pynchon,
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INSTRUCTOR IN RHINOLOGY AND LARYNGOLOGY, CHICAGO POST-GRADUATE MEDICAL SCHOOL.

The busy practitioner frequently meets with cases of headache that baffle his skill and resist his entire therapeutical armamentarium. In a general way such cases are accepted as being malarial or neuralgic, and are often associated with a digestive disturbance which is regarded more as a cause than a companion. In such cases appropriate examination will frequently reveal peripheral or orificial irritation or defect, which, when corrected, will efface the annoying symptom, and prove a relationship which the patient seldom suspects, and one too often overlooked by the attending physician.

Thanks to the patient research and voluminous reports made by the refraction specialist, the profession at large have come to fully recognize the importance of eye strain as a cause of headache. Nasal defects can at times be equally as productive of untoward symptoms, and while the attention of the profession has been frequently called thereto, this cause has not as yet been so fully accepted as has the former. The form of nasal defect which may produce headache is always hypertrophic, and the acting cause a stenosis,

varying in degree from the slightest apposition of opposing parts to a condition of complete occlusion, and which is incidentally in ratio to its extent also productive of so-called nasal catarrh through the inability of the normal secretions being absorbed and evaporated by the to-and-fro currents of air. When headache is produced by nasal defects there will be found to be present, at some point, the element of pressure. When pressure is exerted by or against the inferior turbinates, nature in time produces an atrophy thereof; and thus in correcting one trouble causes a less desirable successor. Since the soft parts covering the anterior end of the middle turbinates are less erectile and more solid than the remaining portions, they reman intact and the pressure continues and is a most frequent cause of headache. Of course it matters not whether such pressure be induced by an interstitial hypertrophy of this body or through a growth upon the septum. By such pressure, as with eye strain, irritation to branches of the fifth nerve is produced, which explains the sympathetic symptoms—as has been fully demonstrated by Woolen.[1]

Nasal headache is excited and intensified by the condition of acute coryza to which the patient is particularly susceptible. When headache is due to eye strain, the pathological condition is most often either astigmatism or insufficiency. In order to more readily distinguish between these two forms of headache *when uncomplicated*, I will tabulate some diagnostic points. It will, of course, be understood, that at times both conditions may be simultaneously present.

WHEN FROM NASAL STENOSIS:	WHEN FROM EYE STRAIN:
Generally unilateral.	Generally bi-lateral.
Frequent insomnia, often worse in the morning.	Sleeps soundly, improved after sleep.
Aggravated by physical exertion, as running, stooping, etc.	Aggravated by mental application and using the eyes.
Not subject to conjunctivitis.	Conjunctivitis after prolonged use of eyes.
Generally nasal catarrh.	Catarrh not complained of.
Excited by acute coryza.	Not subject to acute coryza.
Nose not suspected by patient.	Eyes believed to be the cause.
Dyspepsia and nausea.	Appetite and digestion good.
Astigmatic chart test negative.	Same test generally affirmative.
Pressing middle turb., with probe increases.	Same test negative except to cause sneezing.
No photophobia.	Sensitive to bright light.

Additionally, the astigmatic prefers the approaching to the receding image—in other words, does not like to ride backward

[1] Green V. Woolen, Journal American Medical Association, Oct. 22, 1892, XIX p. 483.

and is also annoyed by the frequent changes of accommodation incident to being upon crowded streets and watching the kaleidoscopic motions of the moving masses.

In this connection, I will report a case showing the immediate and pronounced results secured by correcting the condition of nasal stenosis.

March 22, 1890, E. H. N., male, aged 30, by occupation a lamp trimmer, was referred to me for relief from an annoying and persistent headache which had been nearly constant for the past year, causing great loss of sleep. During this time he had been under the care of a dozen or more general practitioners who had severally and collectively prescribed all of the various remedies reputed to be of value in neuralgic and other forms of headache. I learned from him that several years ago he had been a bar-keeper and had at that time been compelled to engage in occasional fistic encounters, during which his nose was the principal sufferer. On examination I found a stenosed condition of the left nares, chiefly due to a thickening of or ecchondroma upon the septum opposite the anterior end of the middle turbinated body, and an exostosis well forward and near the floor of the passage. There was a tendency to atrophy of the forward end of the left inferior turbinated body due to its pressure against the unyielding exostosis, which, by obstructing the normal swelling of this body, induced the atrophic degeneration. While both of these growths upon the septum *touched* the opposing turbinates, there did not seem in either case to be any particular degree of pressure exerted, though employment of the nasal probe showed the least space in the region of the upper growth.

In the right nares anteriorally both turbinated bodies were slightly hypertrophied. By use of the tongue depressor there was disclosed small diseased tonsils and the granular pharyngitis so frequently associated therewith. By posterior rhinoscopy the posterior ends of the soft bodies were found to be somewhat enlarged, a condition probably dependent upon the anterior source of irritation. While the post-nasal catarrh was pronounced there had fortunately been no aural complication. The memory was impaired and the patient had lost interest in his work.

There was present a slight divergent strabisumus with diplopia, and a small opacity in the center of the left cornea, the result of an injury received several years ago. He complained of a continuous intra-orbital pain, which, as well as the frontal headache, was bi-lateral though more pronounced on the left side. There

was also a luetic history of several years standing, though none of the usual manifestations had for a long time been seen.

During the following month, in addition to the use of nasal sprays, I prescribed, at different times, phenacetin, antipyrin, acetainlid, quinine, aconitia, atropia and the bromides, in the usual manner, but without giving relief. The intestinal movements were sluggish, calling for occasional purges and peristaltic stimulants. The tongue was coated white, indicating hyperacidity of the stomach, while a brownish tinge at the base suggested intestinal sepsis. Nausea was frequently complained of and the appetite was, of course, impaired.

April 14. As the left eye was giving more annoyance I referred patient to Dr. Casey A. Wood for eye treatment. At his suggestion, discontinued bromides and substituted in place thereof bromo-caffeine, which gave some temporary relief, owing to its meeting several of the indications. In consideration of the specific history, potassium iodide was also administered in doses up to fifteen grains thrice daily, though from later developments it would seem that no particular benefit was derived therefrom.

April 21. For the persistent insomnia, prescribed papine ℥i at 7, to be repeated in an hour, if required.

April 22. As an effect of the papine, patient had secured several hours refreshing sleep, being the first for many days. The headache and occular pain still continued, though not so intense. Removed from left of septum, with Brown's ecchondrotome, the growth which was pressing against the anterior end of the opposing middle turbinated.

April 23. Patient reported that he had slept well, that the headache and pain in the eye were both much improved.

April 24. Reported that headache was "all gone," had slept well and that appetite was improved.

In two week's time I removed lower ridge with Bucklin's saw, and during the following month removed the two diseased tonsils by electro-cautery dissection. Each operation was followed by improvement of both the catarrh and stomachal trouble, and on June 24th patient was discharged, being in full possession of his former health.

April 16, 1891. Patient called in reply to my letter requesting him to so do. He reported that there had been no return of the catarrhal symptoms, that his appetite and digestion were normal and that headache was a thing of the past.

Porcher,[2] in an admirable paper on this subject, reviews the literature and reports several cases wherein the presence of nasal ecchoudroma produced pressure symptoms, particularly frontal headache, insomnia, vertigo, unilateral neuralgia, photophobia, malaise, constipation and threatened dementia. He arrives at the following conclusions:

1st. Very serious pathological lesions can exist in the nares, anterior and posterior, without the patient being cognizant of their presence.

2d. The pharynx and larynx, and through them distant organs or the whole system, may be kept in a mal-condition by the presence of such nasal lesions.

103 State Street.

DENDRITIC ULCERATION OF THE CORNEA.

By Howard McIlvain Morton, M. D.,
Of Minneapolis, Minn.

The unusual clinical condition, or picture—the *rara avis*—in ophthalmic practice, is welcomed by us all as a diversion from the commonplace, or routine, manifestations of morbid processes, which we see and deal with in our every-day practice. Dendriform ulceration of the cornea may properly be considered in this class of cases. Excepting the writings of Emmert, Hansen-Grut, comparatively little has been written of this exceedingly interesting form of corneal disease. About all one finds, upon searching the text books, is a few lines mentioning the authors named, and describing it as a very chronic disease, but disagreeing widely on many other points. Many authors do not mention it. Swanyz says: "This is a very rare affection," and again, "the pain and irritation is sometimes slight, and again severe. It is a superficial and *chronic* (italics mine) affection, with but little infiltration of the margin, or floor. Berry remarks: "It is a very *chronic* affection, and there appears never to be any complication of iritis, (a fact my two cases bear out). I have referred to many other authors, but they either do not mention the disease or speak of it only more briefly than Berry and Swanzy. Fuchs regards the condition as "one following upon herpes zoster febrilis of the cornea, the ramifying processes arising from the superficial ulcer

[2] W. Peyre Porcher, Virginia Medical Monthly, July, 1889, XVI p. 286.

remaining after the rupture of the herpetic bleb. The two cases of which I shall speak *do not* bear out Swanzy's statement as regards the chronicity of the condition, both having yielded to treatment in reasonable periods of time, and associated with intense irritation during the first week or two. Neither of them followed upon herpetic corneal disease, as suggested by Fuchs. In both the arborescent character was beautifully revealed by the ophthalmoscope and magnifying lens, and involved only the most superficial corneal layers. De Schweinitz and Kipp have each described a malarial keratitis, which seems to bear some resemblance to true dendriform ulceration, yet differing in etiology in being a deeper process, and so far as I am able to learn, in not having the true arborescent appearance, which is, in all probability, due to a specific microbic product. There was no tendency to iritis, bearing out Berry's statement. The pain in both cases was *unusually* severe, even more so than in some of the other most painful variety of ulcers. This would seem to me but a natural result of its superficial character and branch-like processes.

I shall describe the cases as I find them in my "record book."

Case I.—K. D., aged 14, applied to me on Sept. 28th, for relief of great pain and lachrymation in right eye. Thought "she had gotten something in right eye." Tells me she was vaccinated lately, and immediately after noticed eye became sore and red. Has suffered for two days. Has H. of 1.00 D. Find a small central ulcer with several branches springing from a central point, resembling in form a maltese cross, and with well-marked serrations on the extending branches. Used aristol, dusted upon the ulcer by a small hair brush, and instilled atropine (gr. iv to ℥) with a very weak solution of eserine. Ulcer began to improve after about ten days, and girl was cured in about five weeks, with a *very slight* opacity of the form of the ulcer. Vision was not impaired.

Case II.—F. M., aged 12. Symptoms very much as in preceding case, with probably slightly less irritation. The central region of the cornea involved, very superficial, painful, yielded to the aristol, with atropine and eserine, and at end of third week child said eye did not hurt her. A faint nebulous outline of the ulcer remained, irritation gone and child dismissed.

Both ulcers were very small, central and superficial, and left no noticeable decrease in the visual power.

Aristol, while it may have failed in many conditions, is undoubtedly a royal good remedy in corneal ulcers, and particularly of this

type. I really think it one of our best, if not the best remedy we have in these cases.

In dendriform ulceration, Grossman and Galizowski recommend a 1% of creolin. It will be noticed that the ulcers were both central. Whether this is the usual portion of the cornea chosen by this peculiar microbe for such an interesting piece of work, I am not aware.

51–52 Syndicate Block.

CONTRIBUTION TO AFFECTIONS OF THE PETRO-MASTOID. A REPORT OF FORTY OPERATIONS.

By C. Barck, M. D.,
Of St. Louis.

It will be necessary first to explain the term petro-mastoid used in the caption of this article. Generally the affections considered are designated as disease of the mastoid process and the respective operation as opening of the mastoid process. That this terminology is misleading, is obvious. The part which is primarily affected is the antrum which is situated entirely in the petrous portion of the temporal bones, and would, therefore, be more properly termed petrous than mastoid antrum. The misnomers are mainly due to the descriptive anatomy. It distinguishes three portions of the temporal bone, viz.: the squamous, the petrous portion and the mastoid process. This is incorrect in the light of the history of development. The petrous portion and the mastoid process belong together; they develop out of combined nuclei; the latter being only an appendix of the former. The real third portion is the annulus tympanicus of the embryo, in which the drum-membrane is imbedded and which forms later the lower and anterior wall of the external auditory canal. Gray is the only author, as far as my knowledge goes, who uses the term petro-mastoid in his embryology, which I consider so expressive as to be adopted by the otological literature.

On examination of a large number of temporal bones, we find vast differences in the density of the bone and the number and connection of pneumatic spaces contained in it. But we can distinguish in the majority of them, three more pronounced groups of cavities. They are, going from the tympanum outwardly:

1. The antrum, which lies, as well known, higher than the tympanum.

2. A group of cavities laterally from the antrum and about in the same plane horizontally.

3. Directly below these, the pneumatic spaces in the mastoid process proper.

The antrum is most frequently one larger space, lined by a fine sero-mucous membrane, and in open communication with the tympanum. It is separated from the second category of cavities, which have no such lining membrane, by a more or less thick and dense layer of bone. Between the 2nd and 3rd group there is freer communication.

These anatomical differences explain certain pathological facts. In early operations we find the antrum alone affected. Later on the second, or second and third cavities; still later, subperiostal abscesses. In children, where the bony substance is spongious and soft, this takes place easily and rapidly. In aged people, and especially in cases of solid temporal bones, the process cannot extend beyond the antrum, outward, and therefore there is more danger of intra-cranial complications.

The indications of operative interference, are now, with some exceptions, agreed upon. I shall revert to these after the report of the cases.

The operation was performed in the usual way. Vertical section behind the insertion of the concha, small horizontal from upper end. The site for the removal of the external plate of bone was marked so that the upper line of a centimeter square piece corresponded with the upper wall of the external auditory canal. The spina supra meatum frequently given as a guide in the text-books, is a point which in the living subject, one can rarely find. A set of chisels were exclusively used to open the bone. In many instances after removal of the external plate, sharp spoons are sufficient to lay the antrum open. In others it is necessary to chisel away the bridge between the antrum and the cavities No. 2. In sclerosis of the bone, these are entirely wanting, and there is dense and hard bony substance down to the antrum.

Accidental opening of the lateral sinus during the operation, is not as much dreaded now as it formerly was. A number of cases have proven that its danger was over-estimated. Still it is anything but pleasant, and the valuable hints given by Dr. Koerner in his communication on the possibility of determining some important topographical relations in the temporal bone from the form of the

skull (archives of otology, 1887) ought to be remembered. Based on the measurements of 120 temporal bones of different races, he found an unexceptional and material difference between the dolichocephalous and brachycephalous skulls. The more the latter type prevailed, the deeper the lateral sinus and the lower the middle cranial fossa. The respective type is determined by the comparison of two lines, the one drawn from the bridge of the nose to the occipital protuberance, the other between the parietal protuberances. If we divide the first measurement by the second, we obtain a number, the index, which ranges from 1.55 in pronounced dolichocephali down to 1.07 in the highest degrees of brachycephali; in other words, the more the antero-posterior and the transverse diameters are equal, the deeper and nearer to the field of operation is the lateral sinus.

In three out of the 120 specimens examined, the sinus was so deep as to absolutely forbid the completion of the operation. Koerner's investigations demonstrated furthermore that the right lateral sinus is without exception deeper than the left. In cases, therefore, where a dangerous sinus can be expected, the opening will be made smaller and close to the posterior wall of the external canal. In children, a dangerous situation of the sinus is never met with, as the sinus becomes gradually deeper during the development of the skull.

The antrum must always be freely exposed. Communication with the tympanum for injections is desirable. Frequently this is achieved not immediately but one or two days after the operation. I found it not advisable to close the horizontal section by sutures. The after-treatment is, in a number of cases, an easy one. In others, especially in cases of chronic caries, it needs great attention. Schwartse, the pioneer in this operation, says: "The operation is in many cases only the beginning of our therapeutic measures."

In a number of instances, it was astonishing how soon the suppuration from the middle ear ceased and the perforation in the tympanic membrane closed after opening of the antrum.

The cases I am going to report occurred nearly all in private practice and are given in chronological order.

Case I.—Chronic suppuration from left middle ear of long standing; petro-mastoid abscess and symptoms of beginning menengitis; operation; death the next day.

F. M., aged 56. Strong man. Chronic otorrhœa, with more or less pain at intervals. Since eight days, severe headache, high

fever, then paralysis of different branches of the motor-oculi nerves and coma. Considerable swelling above the mastoid region. Seen first in consultation with Dr. Ludeking on the 16th of Feb., 1887. We concluded to operate in spite of the beginning menengitis as a last resort. Operation the next day. External plate of bone removed with the chisel. The opening leads directly into a cavity filled with pus and detritus. Antrum reached easily. Probe enters 1¾ centimeters. No communication.

Patient seemed to be more conscious after the operation, but became again more and more comatose during the following night and died the next morning. Post-mortem not permitted.

(*To be Continued.*)

NOTES FROM FOREIGN OTOLOGICAL JOURNALS.

By T. Melville Hardie, B. A., M. D.,
Of Chicago.

PROFESSOR OF LARYNGOLOGY, POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; PROFESSOR OF HISTOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO.

Rohrer (Archiv. f. Ohrenhlk. xxxiv. 3.) contributes an interesting account of his experiments with the anilin dyes conducted in the Hygienic institute of the University of Zurich. The possibility of such things in such an institution is one of the many unconscious commentaries upon that recent action of Congress with regard to the Index of the Surgeon-General's Library, which does not, among other things, greatly favor the progress of otological science.

The article under discussion just now, however, is a continuation and corroboration of the writer's earlier researches and conclusions published in the Archiv. f. Ohrenhlk. xxxi. 2 and 3. Leaving the anthrax bacillus to its fate, (it cannot prevail against a 1.1000 solution of a hexethyl pyoktanin) we shall briefly notice a few of the therapeutic indications, as given by Rohrer. For eczema of the auricle and superficial otitis externa, the pyoktanin pencil or tampons dipped in pyoktanin powder. Irritation of the subcutaneous connective tissue and periosteum of the mastoid process, secondary to eczema of the corresponding meatus, yielded promptly to pyoktanin applications to the meatus; in acute purulent otitis media with small perforation, absorbent pyoktanin cot-

ton tampons frequently changed by patient were used for drainage; chronic fœtid cases were greatly benefitted by the dry pyoktanin following thorough disinfecting irrigation and drying; it carries associated with perforation in Shrapnell's membrane the pyoktanin was introduced by means of an applicator.

Stetter reports (*Ibid* xxxiv 1 and 2) a remarkable case of sarcoma of the base of the skull, which on account of the complex of symptoms present is worthy of notice.

July 9.—The patient, aged 31, complained of frequent headaches, left side, pain in left ear with discharge; severe cough, hoarseness, difficulty in swallowing, especially for solids. Examination showed (briefly) left external meatus filled with granulations, total defect of hearing, left side, paralysis of the left vocal cord.

July 20.—Oesophageal bougies proved absence of sensation below pharynx and no contraction of oesophagus. Then followed, Aug. 11, left facialis paresis, weakness of left arm with sinking of shoulder, mastoid pain; a basilar meningitis was surmised; trepanation behind mastoid; no pus. Progress of wound normal. Soon, tenderness on palpation over cervical and brachial plexus.

Sept. 7.—Paresis 1, abducens, vision remaining normal. Diagnosis of tumor of the brain.

Oct. 9.—Death. Postmortem—Left side, region of posterior half of "pyramid" of temporal bone, a swelling, over which the Dura Mater was tightly stretched. Section of this showed a cavity with (unpleasant) contents, with probe bare bone; on base of skull the following among other structures of importance were wanting. Forward two-thirds of margin of foramen magnum part of articulating surface of the atlas; left half of the clivus so that the sphenoidal sinuses were exposed; median and basal half of petrous portion, the bony and cartilaginous ext. auditory meatus. Perhaps the most interesting fact in connection with the destruction of bone was that all of the movements of the head upon the atlas were carried on through the good offices of the right occipital condyle alone. For an enumeration of destroyed foramina with their contained nerves, the reader is referred to the original of this abstract or to the professor of anatomy in the nearest medical college. The reported case might probably serve as the text for final examinations, in, say, anatomy, physiology, pathology, brain surgery, laryngology and otology, and it is to be hoped for the sake of the poor students that the nervi abducents of all examiners are physiologically active.

NOTES FROM CURRENT AMERICAN OTOLOGICAL LITERATURE.

By Leonard A. Dessar, M. D.,
Of New York.

VISITING LARYNGOLOGIST AND OTOLOGIST TO MT. SINAI HOSPITAL DISPENSARY; VISITING LARYNGOLOGIST TO ST. MARK'S HOSPITAL; FORMERLY ASSISTANT-SURGEON, MANHATTAN EYE AND EAR HOSPITAL, ETC., ETC.

FOREIGN BODIES IN THE NASAL AND AURAL PASSAGES.

Dr. R. S. Magee (*Kansas Medical Journal*, February, 1893) in a practical article on the extraction of foreign bodies from the nose and ear, advises strongly against the use of forceps, and concludes as follows:

1. Be sure, by ocular examination, of the presence of the foreign body. 2. Then use the syringe and hot water. 3. If this fails, use the blunt hook or hairpin, but not the forceps, unless you can catch it safely. 4. If these fail, use the glue and camel's hair brush. 5. Do not act rashly. Assure the family that there is no immediate danger.

TINNITUS AURIUM.

Dr. J. F. Hill (*Memphis Medical Journal*, Feb., 1893) reports the case of a woman, who for two years had been so troubled with a continuous roaring in her ear that it was almost impossible for her to get a sufficient amount of sleep. An examination revealed post-nasal catarrh, with considerable swelling of the tissues. This yielded rapidly under treatment, combined with politzerization, but the tinnitus persisted. The middle turbinated bone which was hypertrophied and pressed against the septum, was then removed, and the tinnitus at once disappeared and has not recurred.

NECESSITY OF FINDING THE CAUSE OF RECURRENT EARACHE WHICH SUBSIDED WITHOUT APPARENT INJURY TO THE EAR.

Dr. Hiram Woods (*Canada Lancet*, March, 1893) states that cases of recurrent earache, in accordance with their subsequent histories, may be divided into three groups: 1. Those who "outgrow," as it is called, the earache, or at any rate cease to have the attacks, and retain good hearing. 2. Those who continue to have

occasional paroxysms, or else now and then feel a twinge of pain, without the development of any special symptoms, save a slight and possibly transient defect in hearing. 3. Those who, after an attack of earache, have a serous or purulent otorrhora. This may subside and leave the ear still useful, but nevertheless impaired, or it may become chronic. Barring furuncular and diffuse inflammation of the external auditory canal, painful affections of the ear are due, usually, to catarrhal inflammation of the tympanic cavity, or to reflex neuralgia of the ear from some cause outside the ear itself. The teeth, and more particularly dentition, constitute a source of ear disease which is not sufficiently appreciated. The author, therefore, concludes that the diagnosis in cases of recurrent earache must include the condition of the drumhead, pharynx, nose and teeth, and that therapeusis must include the treatment of disease found in these structures.

TINNITUS AND VERTIGO FROM MIDDLE EAR DISEASE.

Dr. B. Alexander Randall (*Philadelphia Polyclinic*, Feb., 1893) reports a case of excision of the malleus and incus for tinnitus and vertigo, with only slight improvement. He looks upon the removal of the stapes as being the more rational measure and the one that should be resorted to in appropiate cases.

EAR AFFECTIONS OF TYPHOID FEVER.

Dr. Robert Barclay (*Medical Fortnightly*, March 1, 1893) states that the principal aural lesion of typhoid fever discoverable at the autopsy are as follows: Closure of the Eustachian tube, with catarrh of the fauces; catarrhal otitis media, with profuse secretion; congestion of the mucous membrane of the middle ear, in all its phases, and with all its consequences—perforation of the drumhead, dislocation or disintegration of the ossicles, inflammation of the cells of the mastoid process, facial paralysis, extension of the inflammation to the encephalon; parotitis with rupture into the external auditory canal; hyperæmia of the internal ear; ecchymosis in the vestibule and lower part of the cochlea, but not in the semi-circular canals, with ecchymosis in the tympanum and osseous Eustachian tube; destructive hemorrhage in the labyrinth, internal auditory canal, and deeper lying parts; infiltration of the utricle, saccule, ampullae, membranous lamina spiralis, and, exceptionally, the semi-circular canals and the zona ossea, of the labyrinth; suppurative otitis interna.

EARACHE FROM DISEASED TEETH.

Dr. R. D. Barret (*Ibid.* March 1, 1893) says the history of such cases is as follows: Probably it is the first attack, or there may have been trouble of the same kind at a former time, ceasing after a few days. Severe pain, worse at night, inability to sleep, little or no acute rhinitis, and no knowledge of exposure to cold. An examination reveals a normal membrana tympani, or in some cases slight congestion may be noticed along the long process of the malleus, but no bulging of the membrane or other signs of acute or subacute catarrhal inflammation. In such cases the author advises that the teeth be properly examined, and that often we will find in them the cause of the whole trouble.

OPENING THE MASTOID CELLS FOR NON-SUPPURATIVE INFLAMMATORY DISEASE.

Dr. L. E. Maire (*The Physician and Surgeon*, Feb., 1893) thinks that there is a certain percentage of cases of general inflammation of the mastoid peculiar in themselves, inasmuch as pus is not apt to be present until the inflammatory process has existed some time. These cases are very painful. They might be classed as typical cases of acute diffuse osteitis, often resisting both local and constitutional treatment. The author regards such cases as favorable for operation, because experience shows that the severe pain and reflex symptoms rapidly subside after perforation, which tends to relieve the intense congestion of the bone and cells. Three cases are reported illustrating the benefits of operative interference.

OTITIS MEDIA PURULENTA FOLLOWING AMPUTATION OF THE UVULA.

Dr. W. S. Braislin (*Ibid*) reports the case of a man, aged thirty-five, suffering from pulmonary tuberculosis, who was attacked by a constant, violent and distressing cough. Amputation of the uvula, which was markedly elongated, relieved the severity of the cough, but was followed by pain in the right ear. When seen three months after operation the patient stated that the ear had been discharging for six weeks. An examination showed two slit-like perforations in the drum membrane, which was whitish and opaque. The author thinks that the otitis was of tubercular character dependent upon the removal of the uvula. The soreness and pain immediately following the operation led to an involuntary suppression of the strong contractions of the levators of the palate, naturally occurring during the expulsory act of coughing. The removal of the uvula, also, doubtless, contributed to the freedom with which coughed-up sputa entered the pharynx and thence the openings of the Eustachian tubes.

NOTES FROM CURRENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By M. D. Lederman, M. D.,
Of New York.

ASSISTANT TO THE CHAIR OF LARYNGOLOGY AND RHINOLOGY, NEW YORK POLYCLINIC; ASSISTANT LARYNGOLOGIST TO THE MT. SINAI HOSPITAL DISPENSARY; ASSISTANT TO THE EAR DEPARTMENT MANHATTAN EYE AND EAR HOSPITAL.

Mr. C. Heath, London, on Modern Rhinology.

(*Occidental Medical Times*, Vol. 6, No. 12). If we had not seen the name of an eminent authority, fathering this recent and uncalled for attack upon a successful branch of surgery, (which shows in the last few years more advance, and is to-day making greater strides, than what we used to designate as general surgery, and which the latter, Mr. Heath still maintains to be "all sufficient" for the human race), we should fancy these statements to be those of one, whose opportunities of observation had been limited. It is hardly possible that the lecturer's sentiment could have been generally accepted by his listeners, when we recall the names of such distinguished men as Mackenzie, Browne, Watson, McBride and others. Mr. Heath takes particular care to alight on the exceptional and unfortunate sequelæ of nasal surgery. In his eagerness to decry this successful branch of special surgery, he evidently closes his eyes to the importance of its association with the studies of laryngology and otology. The author advises the use of the nasal douche as a diagnostic factor in determining whether the naso-pharynx is obstructed or not. If my learned colleague was more conversant with the use of the rhinoscopic mirror, he could easily ascertain the condition of the post-nasal space, and avoid any of the unpleasant complications which may result from the use of the nasal douche. In the preliminary treatment of nasal diseases, we have a valuable diagnostic means for indicating when operative procedure may be necessary. Mr. Heath is certainly not conservative in recommending applications of a twenty (20) per cent solution of cocaine for general use in the nose or throat. A more elegant and serviceable method of protecting the finger in examination of the upper pharynx is the introduction of Denhardt's modified mouth-gag.

Powders have their unpleasant consequence when blown into the nose. Inhaled into the pharynx or larynx, they produce considerable

discomfort, and frequently start paroxysms of cough. The author suggests the sniffing-up of the cocaine solution by the patient before operation. This advise is faulty, for this procedure is accompanied by a most disagreeable effect upon the mucous membrane. Cocaine is best applied by means of the applicator. thus avoiding any of its constitutional effects by localizing its action. To hear such views expressed by so eminent an authority is deplorable, when we consider the rapid strides made in the domain of rhinology in the last few years, especially by men whose scientific attainments cannot be doubted.

RETROSPECT OF DISEASES OF THE PHARYNX, LARYNX AND NOSE, FOR THE YEAR 1892.

(Editors *Journal L. R. et O.*, Vol. 7, No. 1). Apologizing for their abbreviated review of the work promulgated during the past year, they give to the reader of their valuable journal a most practical resume. The sentiment they express, and which should be sincerely appreciated, especially by those who imagine the affections of the upper air passages can be summarily dealt with is, "In perhaps no other class of diseases, is it more necessary that treatment should be carried on with perseverance, and over a prolonged period." We must not alone treat the acute attack, but wriggle through the superficial network, and discover the original lesion, perhaps of many years duration. Improperly performed operations are not productive of the desired result. The unremoved portion of a pharyngeal tonsil, may lead to unpleasant conditions of the middle ear. Hovell has recorded the importance of lateral pharyngitis as a prime factor in the causation of chronic Eustachian catarrh. For the slighter forms of the disease, tricloracetic acid in strong solution, applied by means of the probe, wrapped with cotton, is a simple method suggested especially if the affection is centrally located. The galvano-cautery is reserved for the lateral manifestations. The cautery should be carefully used, so as not to affect the underlying muscles. In the treatment of dry pharyngitis, Lugol's solution is the remedy recommended, to be persistently applied. Tubercular ulcerations of the pharynx are best held in abeyance by the galvano-cautery and lactic acid. The most favorable cases for cure being superficial ulcerations, with little induration of the submucous tissue. Hypertrophied tonsils are best reduced in the adult by the galvano-cautery; the amygdalotome being preferred in children. Mixed treatment, to-

gether with the application of chromic acid, or Lugol's solution, has been the more serviceable in syphilitic ulcerations of the tonsil. Lugol's solution, composed of :

℞

Iodinii..... gr. vi
Potassii iodidi..... gr. xii
Ol. menth. pip..... m. xii
Glycerini..... ℥i

M.

is also used as a daily application to the exclusion of the galvanocautery, in hypertrophy of the lingual tonsil. The subject of intubation brings forth statistics, the paper of our illustrious colleague, Dr. O'Dwyer, being kindly considered. Our American writers advance some new thoughts in the surgical study of the epiglottis; but whether their methods will prove worthy of acceptance, remains to be seen. Improper use of the voice, in the consideration of throat diseases, recalls the discussion excited at the British Medical Association. Mentioning the progress made in the treatment of nasal diseases, the collaborator has dealt lightly with his fellow-countryman, Mr. Heath, and although his expression of astonishment was kindly put, we heartily agree with his sentiment. Among the many works named which have appeared during the year are those of Bosworth, Lennox Browne, Macdonald, McBride. Germany offers those of Rosenthal, Juraz, Zuckerkandl, (a very descriptive work), and the translation of Massei's book upon "The pathology and therapy of the pharynx, the nasal cavities, and the larynx." France contributes Dumont's "Practical treatise of the ear, nose, mouth and larynx." Sedziak's interesting paper upon "*Rhinitis croupsa et fibrinosa*" is especially mentioned. Sheppergrell advises the employment of electrolysis in chronic hypertrophic rhinitis, and claims it is as effective as cauterization, and diminishes the risk of sepsis. Tricloracetic acid, in from ten (10) to fifteen (15) per cent solution, is recommended in the treatment of atrophic rhinitis, by Adolph Bronner. Previously cocainizing the mucous membrane, the acid solution is applied by means of the cotton-mounted applicator, and rubbed into the tissues. The after-treatment is in the form of a snuff composed of aluminum-acetico-tartaratum, menthol, camphor, and boric acid. Nasal irrigation is considered dangerous, by Barr, of Glasgow, especially if the stenosis exists. Milligan suggests "coarse sprays as a much safer and equally efficient method of cleansing the nasal passages." Major, of Montreal, introduces a new hook-shaped

septal knife. The instrument is passed behind the septal ridge; traction being made, the growth is easily removed. For the correction of non-traumatic deviation of the septum, Chatellier advises the following plastic operation under cocaine anesthesia anesthetic. A horizontal incision is made parallel with the floor of the nose; a second incision is made through the most prominent portion of the deviation, in a vertical direction. The septum is then separated from the tissues, and the obstructing portion removed. The flaps are replaced, and iodoform tampons keep the parts in position. Many are the diseases mentioned, supposed to have their origin in the nasal cavities. Asthma, asthenopia, and neurotic affections, are recorded as being cured by intra-nasal treatment. The study of diathetic conditions is an important factor, suggested by Robinson. During the past year the diseases of the accessory cavities of the nose have attracted considerable attention. The best location for opening the maxillary antrum is above the canine fossa. Free drainage should be established, and if polypoid degeneration be present, curetting is the proper procedure. Tubes should not be introduced for drainage, as their presence retard alleviation of the symptoms.

(With all this highly interesting and instructive material before us, the statements of Mr. Heath in his lecture "On modern rhinology," fade rapidly in the dazzling light of experience, and plainly reveal that their distinguished propounder has gazed through the glass, but dimly)." M. D. L.

(To be Continued.)

PROFESSIONAL NEWS.

Dr. Emmett L. Jones has removed from Florence, Alabama, to Chattanooga, Tennessee.

Dr. Walter G. Hope, lately of Kansas City, has established himself in practice at Albuquerque, New Mexico.

Ophthalmic Section American Medical Association.

The time for the annual meeting of the American Medical Association (June 6th to 9th) at Milwaukee, Wis., is so near at hand that all members who wish to contribute papers must send the title of their paper to the secretary before April 25th in order to have them appear in the general programme and in order to

make arrangements for discussion. It is also urgently requested that brief abstracts be furnished not later than May 15th in the form in which authors wish them to appear in the preliminary report of the meeting. The announced communications, as well as the names of those who have promised to attend, assure the success of the next meeting. In view of the historical interest which the Columbian celebration lends to the meeting, it is highly desirable that American Ophthalmology should be well represented by the names and presence of those who have contributed to its present advanced position.

S. D. RISLEY, M. D., Chaiman, 1722 Walnut street, Philadelphia.

H. GRADLE, M. D., Secretary, 65 Randolph street, Chicago.

The sections on Ophthalmology, Otology, Laryngology and Rhinology of "The Pan-American Medical Congress" have organized for the meeting at Washington, D. C., September 5th, 6th, 7th and 8th, A. D. 1893, with the following executive officers:

SECTION ON OPHTHALMOLOGY:

Executive President: Dr. Julian J. Chisolm, of Baltimore, Md. Secretaries for the United States: Dr. George M. Gould (English speaking), of Philadelphia; Dr. J. Harris Pierpont (Spanish speaking), of Pensacola, Fla.

SECTION ON OTOLOGY:

Executive President: Dr. C. M. Hobby, Iowa City, Iowa. Secretaries for the United States: Dr. Max Thorner (English speaking), of Cincinnati, Ohio; Dr. H. McHatton (Spanish speaking), of Macon, Georgia.

SECTION ON LARYNGOLOGY AND RHINOLOGY:

Executive President: Dr. E. F. Ingals, of Chicago, Illinois. Secretaries for the United States: Dr. T. M. Murray (English speaking), of Washington, D. C.; Dr. J. M. Alonsa (Spanish speaking), of Las Vegas, N. M.

TO THE OPHTHALMIC SURGEONS OF THE WESTERN CONTINENT, THE PAN-AMERICAN MEDICAL CONGRESS SENDS GREETING.

It asks their aid to make this the greatest gathering of American physicians that has ever taken place. The meetings will be held in Washington, D. C., on the 5th, 6th, 7th and 8th of September, 1893. It is to be a part of the scientific work of the Columbian Exposition, which will attract the eyes of the world to Chicago.

I have been honored in being put in charge of the Ophthalmic section of the Congress, and naturally desire that this department shall be at least the co-equal of any of the various sections in the good scientific work which the Congress is expected to exhibit.

Ophthalmology, the first of the medical specialties to attract the attention of surgeons, took the lead in the great advance of modern medicine; and it keeps abreast of the most zealous in developing that science which has for its sole aim the health and welfare of the human race. *Eyesight is essential to the world's progress.* How best to preserve it is a study in which man must ever take the deepest interest. While we know much in this connection, there is a great deal more to be learned. We need light on all points on ophthalmic practice, so that the tendency of diseases toward the destruction of eyesight may be checked.

In certain directions immense progress has been made. Those blind from cataract now receive their sight through a perfected operative manual. Would that we could say the same for chronic glaucoma and for the detachment of the retina. The pathology of sympathetic ophthalmia and how to prevent its frightful ravages is much needed information. We are familiar with the disturbing influences which the various eye nerves occasion. The recognition and the correction of refractive errors give brilliant results in the relief of eye and head pains; yet we know that glasses alone do not always remove the annoying head discomforts which badly-working eyes produce. The want of concordance in the action of the eye muscles is often a barrier to relief. How to manipulate these so as to stop annoying reflexes, is a want which all recognize.

How to stop the progress of nerve atrophy and turn back the stream of health-giving impulses is also knowledge anxiously desired. What to expect from electricity in the strengthening of eye muscles, and electrolysis in removing opacities of the cornea, are subjects full of interest in a field comparatively unexplored. *There is no part of opthalmology so well known that additional information is not needed.*

In the four (4) days of the Congress devoted to the reading and discussion of papers, we expect to be instructed on many obscure points of eye pathology. We hope that all ophthalmic surgeons will give to the meetings not only their presence, but also their experiences on special points to which they have given the more careful study; for as is well known in our specialty, there are many specialties.

The Columbian Exposition, of which we are an outgrowth, will be an institution long to be remembered. Let it also be said of the Pan-American Medical Congress that it had put scientific medicine upon a much more advanced platform than had existed prior to the meeting. This ophthalmic section of the Congress is open to each and every member of the medical profession of the western hemisphere pursuing the study and practice of ophthalmology. *Each one is especially invited to be present at the meetings of the section.* We desire carefully prepared papers to be read and discussed. Will you prepare a paper on whatever your professional experience has taught you to be especially good or new in ophthalmology? Or will you come prepared to discuss the subjects which will be introduced to the Congress by the reading of papers? In any case *come to the Pan-American Medical Congress in September, 1893.*

JULIAN J. CHISHOLM, M. D., LL. D.,
President of the Opthalmological Section of the Pan-American Medical Congress.

114 West Franklin street, Baltimore, Md.

BOOK NOTICES.

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THROAT, NOSE AND NASO-PHARYNX. By Carl Seiler, M. D., Instructor in Laryngology and Lecturer on Diseases of the Upper Air Passages, in the University of Pennsylvania. Fourth edition, thoroughly revised and greatly enlarged. Illustrated with two lithographic plates, containing ten figures and 107 engravings. 12 mo., 414 pages. Cloth, $2.25. Philadelphia, Lea Brothers & Co., 1893.

The fourth edition of this excellent handbook is a decided improvement. Numerous additions have been made, among which may be mentioned chapters on Influenza, Intra-nasal Neoplasms, effect of uterine disease upon the membranes of the upper air passages, intra-nasal disease as a cause of acne of the face and neck.

The number of illustrations has been increased which will prove of assistance to the reader by illustrating the subject matter. The drawings being produced by the author himself is a guarantee of their accuracy, making them valuable contributions.

The views expressed by the author are those which have met with general acceptance, so that the student and physician can turn to Seiler's Handbook for the diagnosis and treatment of diseases of the throat, nose and naso-pharynx with confidence.

New York Eye and Ear Infirmary Reports. The first number of this publication is of great merit. It contains thirteen good original articles by the surgical staff of the New York Eye and Ear Infirmary. A summary of the annual report of the institution is included. The "Publishing Committee" announce that future issues will appear at intervals as material shall be collected.

Copies may be obtained from Messrs. G. P. Putnam's Sons, New York. Price, $1.25 per copy.

A Manual of Clinical Ophthalmology. By Howard F. Hansell, M. D., Lecturer on Ophthalmology in the Jefferson Medical College, chief clinical assistant in Eye department Jefferson Medical College Hospital, member American Ophthalmology Society, fellow of the College of Physicians, Philadelphia, etc.; and James H. Bell, M. D., lately demonstrator of Anatomy in Jefferson Medical College, member of Ophthalmological staff Jefferson Medical College Hospital and Dispensary, etc. P. Blakiston, Son & Co., Philadelphia. Price, $1.75.

This manual of 223 pages contains 120 illustrations, including a chromo-lithograph of the "Normal Fundus," a brief review of the anatomy and physiology of the eye.

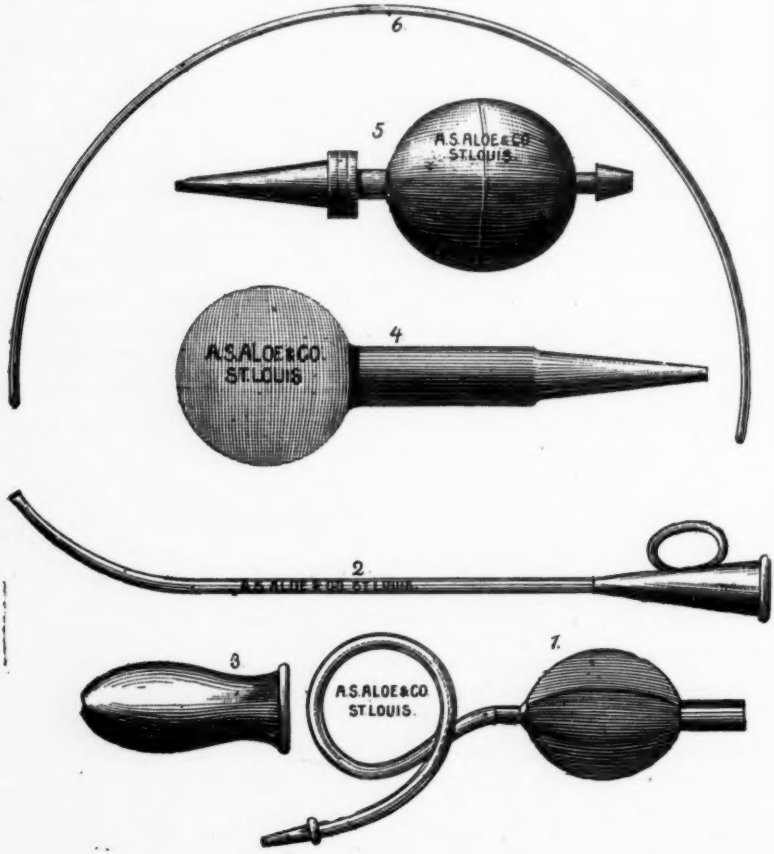
The authors have succeeded in compressing in small compass the essential facts of ophthalmology, and giving to those interested in the study of medicine a plain, concise statement of the practical features in the correction of errors of refraction, operations, and in the diagnosis and treatment of the most common diseases of the eye, and have thus provided an acceptable book which will occupy a place between the Quiz-Compend and the larger treatise.

NEW INSTRUMENTS.

IMPROVED OTOLOGICAL INSTRUMENTS. By H. N. Spencer, A. M., M. D., Professor of Diseases of the Ear, Missouri Medical College and St. Louis Post Graduate School of Medicine.

The cuts presented herewith represent a group of instruments which the aural surgeon will recognize as indispensable in the treatment of middle ear diseases.

The forms are those which the experience of the writer has led him to adopt as being the best.



The air-bag (1) is that of Dr. Lennox Browne.

The short catheter (2, *natural size*) is the one described by Dr. Edward Woakes of London, Mr. Hodgson of Brighton, and Dr. Weber-Liel of Berlin.

The Eustachian bougie (6) is made of celluloid, which material is much to be preferred to catgut.

Three of the cuts (3, 4 and 5) represent devices which are original with the writer. The air-bag which is armed with a point for use in conjunction with the catheter is provided also with a nasal tip (3) for Politzer's inflation. This arrangement secures greater cleanliness and provides the means of antiseptic precaution in furnishing each patient with a tip. For treatment of the Eustachian tube and drum cavity by injection of fluid the catheter syringe (4) has been constructed with a point to fit accurately into the proximal end of the catheter. In the treatment of the ear by vapors, for the use of substances which volatilize easily, as acetic ether, ethylene di-chloride, chloroform, etc., in order to spare the patient the discomfort and even the more serious incidents which might arise from the employment of Buttle's inhaler and the Politzer inflation, the vaporizer (5, *natural size*) is recommended. By the former process not only the nasal mucous membrane but in unilateral disease the unaffected drum cavity is needlessly subjected to the severe pressure and the medication which might entail serious consequences. This instrument was first made for the writer in the spring of 1890.

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AND TEN GRAINS SALICYLATE SODA.

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